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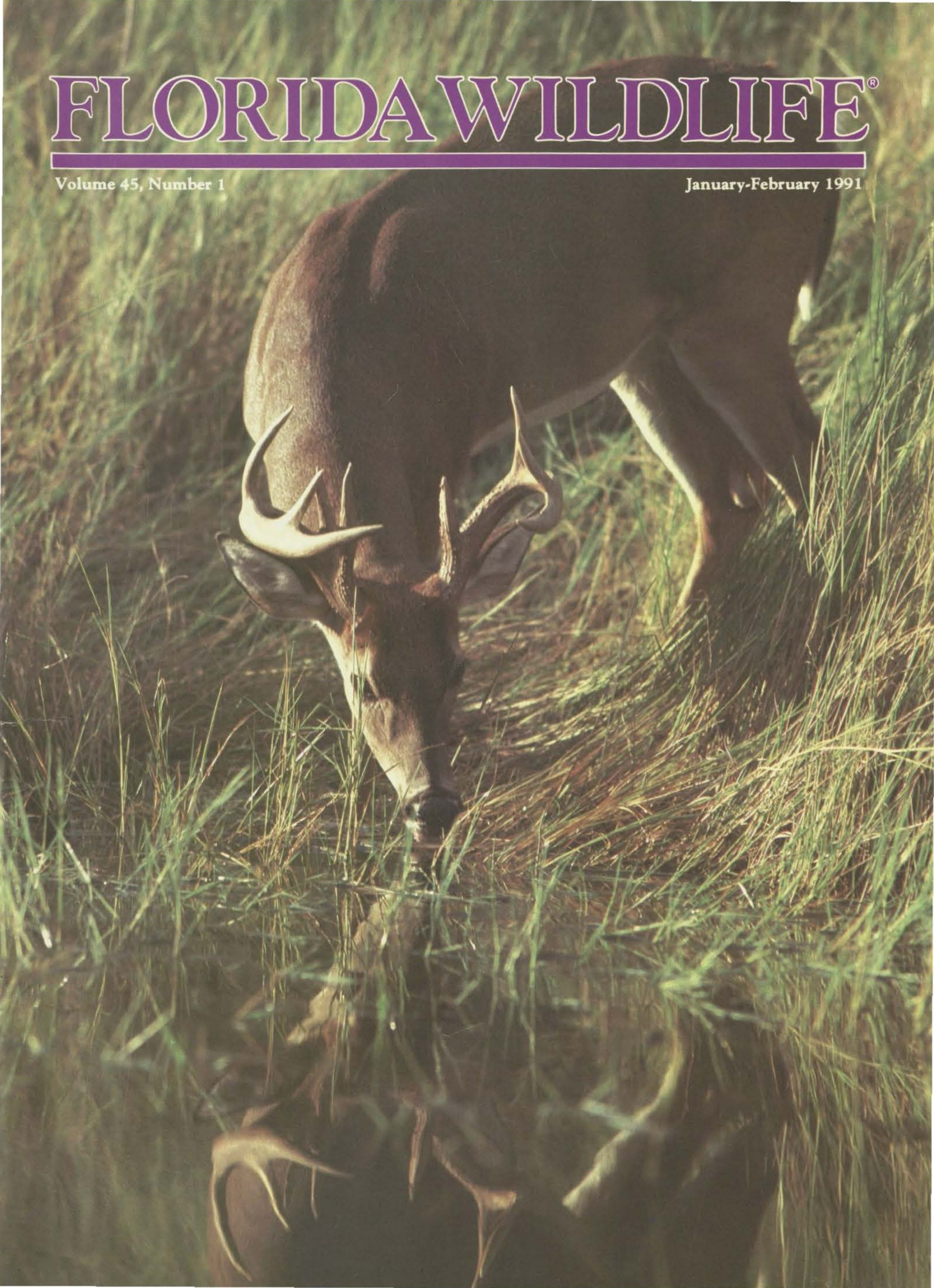
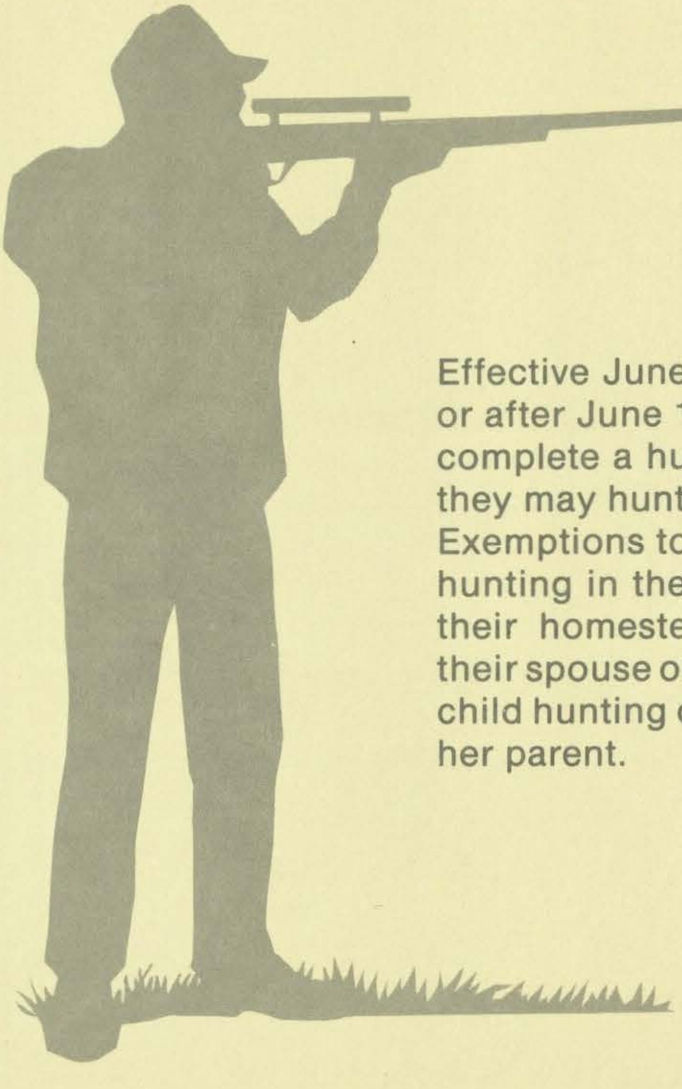


Attention Young Hunters



Effective June 1, 1991, hunters born on or after June 1, 1975 will be required to complete a hunter safety course before they may hunt with a firearm.

Exemptions to this law apply to persons hunting in their county of residence on their homestead or the homestead of their spouse or minor child, or any minor child hunting on the homestead of his or her parent.

For information on Hunter Education classes in your area, contact the closest Commission Regional Office (listed on page 48).

FLORIDA WILDLIFE®

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Florida Habitats

Our series on wetlands concludes in this issue. Watch for articles on uplands in future issues.

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Our Covers

William J. Weber took the front-cover photo of the buck in a reflective moment. Lloyd Hill photographed the elusive bobwhite quail on the back cover. Mary Tebo describes the land management technique that sparked a turnaround in bobwhite quail numbers in the Floridana column on the inside back cover.

Piping Plovers

By Lenela Glass-Godwin

Walking along Florida beaches this winter, you might notice a tiny shorebird foraging along the water's edge. At first glance, you may think that it's a sanderling, one of our most common shorebirds. Closer inspection, however, reveals that the bird has a somewhat grayish back, a black breast band and orange legs. Lucky you! You've spotted a piping plover, one of our rarer shorebirds.

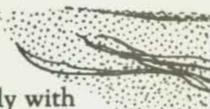
You're entitled to show some enthusiasm, since only about 3,500 to 4,200 of these birds currently exist in all of North America. Seeing one or more is thus a rare treat. The species is listed as endangered in Canada and the U.S. Great Lakes and threatened throughout the remainder of its range, which during the winter includes Florida.

The piping plover is a migratory shorebird named for the shrill piping sound delivered by males as they try to attract mates. Plovers are 6 to 7½ inches in height and are often mistaken for sanderlings, which are 7 to 8 inches tall, or for the 9- to 11-inch killdeer.

Large numbers of "pipers" nest on lakes and alkali wetlands in southern Canada and the north-central United States. Another population of this species breeds along the Atlantic coast from Newfoundland to North Carolina. Additionally, some piping plovers nest on gravel spits along large rivers in Montana, North Dakota, South Dakota and Nebraska. Pipers which breed along the Atlantic seaboard simply move further south for the winter, from the coast of North Carolina down to the northern and central coastlines of Florida. Wintering birds are also found sporadically along the Gulf of Mexico, from Florida to Brownsville, Texas.

Atlantic Coast pipers arrive on their breeding grounds in late March, while the inland population, most of which winters in Texas, arrives on prairie locales during the first two weeks of May. The birds tend to be site tenacious — that is, they return to the same breeding spots year after year unless these areas have been destroyed (which increasingly is the case). These plovers are generally faithful to one mate during a single breeding season but will change mates and territories upon nest failure or between years. Males establish territories spaced 25 to 200 yards apart and attempt to attract females by performing aerial courtship displays and "piping."

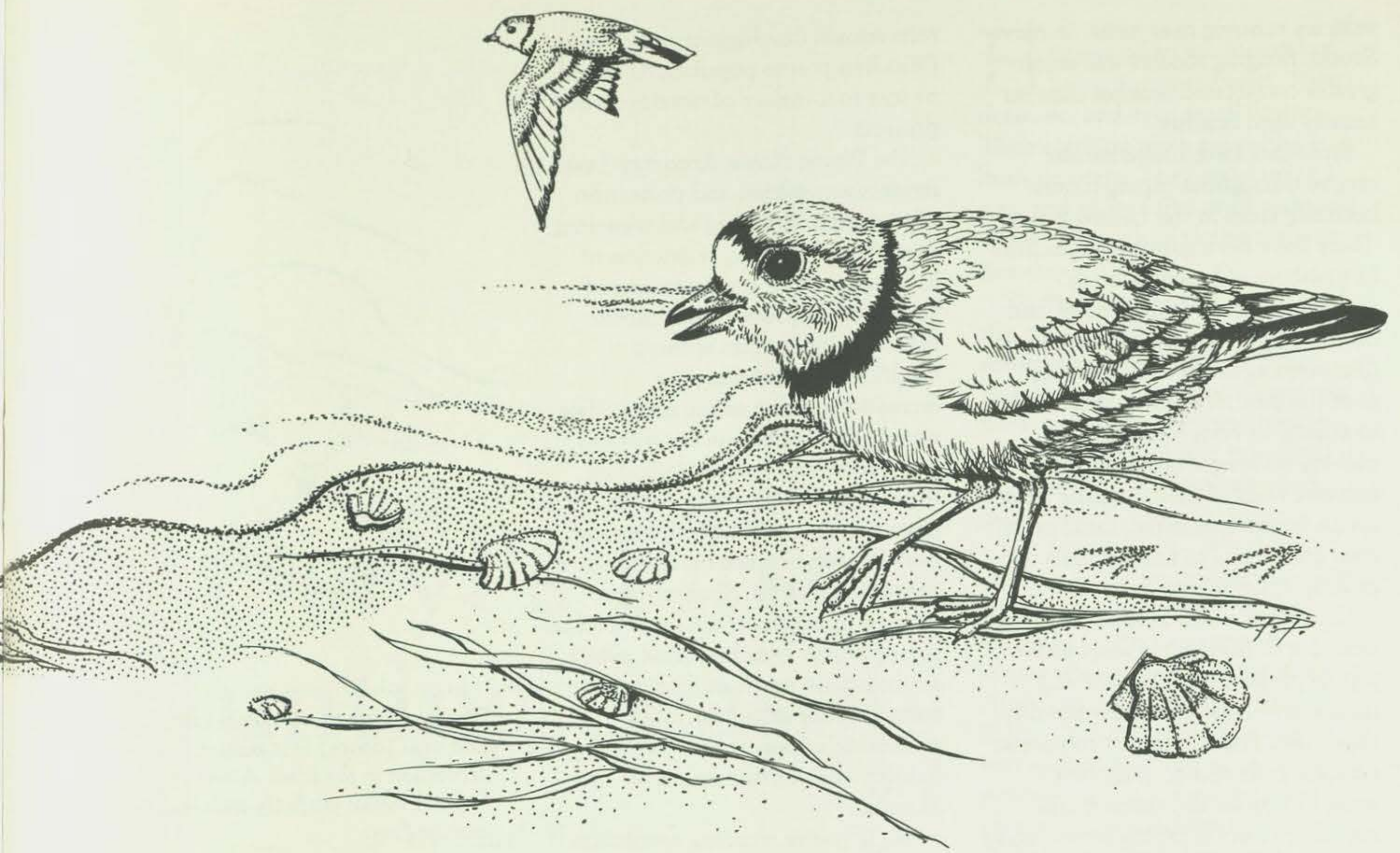
Once a willing female piper appears on the scene, nestbuilding activities commence. As is the case with many shorebird species, the "nest" is merely a shallow depression in the sand, often lined with minuscule shells or pebbles. The female lays a clutch of four eggs which hatch in 25 to 31 days. Both males and females incubate eggs and brood chicks. Tiny piping plover chicks blend perfectly with their drab surroundings. They will fledge about 20 to 32 days after hatching and are able to breed at 1 year of age.



Adults leave their breeding areas as early as the first week of July and begin an arduous journey to their wintering grounds. No one knows whether this migration flight is non-stop or if the birds stop over en route. Frequently the birds are found on beaches early in the post-breeding period but later tend to spend their time on sandflats on the back sides of barrier islands or on the bay sides of peninsulas.

These areas frequently are difficult for researchers to survey adequately. Dr. Susan Haig, a plover biologist currently with Clemson University, conducted a census of wintering piping plovers in 1984. Her census revealed a total of 834 piping plovers in all wintering areas, with over 400 of those occurring in Texas. Recent winter surveys by Janice Nichols of the U.S. Fish and Wildlife Service (FWS) suggest that Florida also provides wintering habitat for substantial numbers of piping plovers. Florida beaches hosted 22 percent of the wintering birds counted in 1987 and '88, mostly on the Gulf coast. Future surveys for wintering pipers are planned.

Once they have made it to their wintering grounds along the Gulf or lower Atlantic coasts, piping plovers



spend their time roosting in protected areas and feeding on marine worms, mollusks and crustaceans. High-quality feeding habitat is often associated with nearby salt marshes, sea grass beds, alluvial rivers or bays. Feeding begins with the onset of a falling tide when food is exposed. Sandy mud flats with a low slope are exposed slowly and for a longer duration during a falling tide and make especially attractive feeding areas. Barren sand flats above the tide line rarely are productive enough to attract feeding plovers.

Often piping plovers are observed foraging with a number of shorebird species which, together, constitute what biologists call a "guild." A guild consists of a group of organisms utilizing a common resource but in slightly different ways so as not to compete with one another. For instance, in Florida you might see piping plovers foraging with other shorebirds such as red knots, dunlins, short-billed dowitchers, willets and black-bellied plovers. Additionally you might see pipers with snowy plovers, American oystercatchers, ruddy turnstones, sanderlings and Wilson's plovers. Almost all of these shorebirds are considered abundant compared to the piping plover, whose low numbers have caused great concern among conservationists.

How did this little relative of the killdeer arrive in its present precarious position? Several plover biologists speculate that piping plovers probably were never abundant. Naturalist A.C. Bent, who studied shorebirds extensively in the early part of this century, reported that unregulated commercial harvest caused a serious decline in piping plover numbers around 1900. Passage and enforcement of the Migratory Bird Treaty Act afforded protection to this species and many others so that populations began to recover in the 1920s.

Unfortunately, construction of beach homes along the Atlantic coast and Great Lakes shores following the Depression forced yet another piping plover decline. The species was placed on the National Audubon Society's "Blue List" of species of special concern in 1972. Canada acted before the United States in assigning the piping plover threatened status in 1978, which that country subsequently revised to endangered in 1985. In that same year, the FWS declared the piping plover endangered in the Great Lakes area and threatened throughout the remainder of its range. Since then, the FWS has formed a Piping Plover Recovery Team with Dr. Haig as the leader. She notes, "Recovery of piping plovers is possible but will require the resolution of conflicts on many local sites."

Haig refers to conflicts between beach-loving humans bent on coastal development and recreation and the specific habitat needs of piping plovers. Researchers have documented that piping plovers have experienced decreased reproductive success on heavily used beaches. In a 1987 Audubon Wildlife Report, Haig stated, "Piping plovers are sensitive to the presence of people on beaches and have suffered significant losses from ▷

vehicles running over nests. In Nova Scotia, fledging success was much greater on isolated beaches than on heavily used beaches."

Biologists have found similar results throughout piping plover breeding areas in the United States. There have been substantial declines in numbers of breeding birds throughout their prairie range, and on the Atlantic coast numbers have decreased as much as 25 percent over the past five years alone. Due to coastal development, piping plovers no longer breed on the extreme ends of their Atlantic coast range. Instead, breeding birds must now congregate in heavily used middle Atlantic sites.

Of course, many animals aren't as sensitive to human presence as are piping plovers, and this fact has compounded problems for the tiny shorebird. Populations of raccoons, skunks, gulls and dogs thrive in areas of human disturbance and regularly feast on piping plover eggs and chicks. Thus, increased predation as well as habitat loss or alteration have in large part brought about the tenuous existence piping plovers now face.

The news isn't all bad, however. Populations of breeding pipers have been protected from public disturbance by the closing of areas in Manitoba, Prince Edward Island National Park, New Brunswick, Minnesota and certain coastal beaches in Virginia. The Nature Conservancy has begun purchasing important nesting areas in North Dakota as well as Atlantic coast barrier islands essential to migrating and wintering piping plovers. The Canadian branch of Ducks Unlimited has engaged in a project in southern Saskatchewan designed to attract piping plovers to artificial nesting habitat.

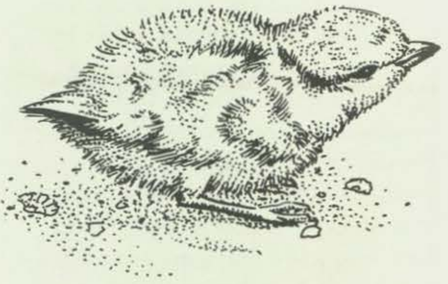
While these positive steps are encouraging, Haig warns that conservation efforts on behalf of this species should not falter. "At this point, if no protective measures were initiated, piping plovers on prairie rivers would lose nest sites to water-management plans; Great Lakes, Atlantic coast and Gulf of Mexico sites would be lost to recreational development; and major Canadian prairie populations would be lost to a variety of development projects."

The Piping Plover Recovery Team stresses acquisition and protection of important breeding and wintering sites. "Additionally, restriction of human access to small sections of beach will improve piping plover reproductive success without significantly decreasing the recreational value of the area," Haig noted. This technique has worked well for several species, including the threatened least tern, which nests within cordoned-off areas of heavily used beaches on Florida's Santa Rosa Island. Similar steps need to be taken on the local level in piping plover breeding areas, which are primarily north of Florida. The team also has called for careful evaluation of winter and migratory habitat, such as that found in Florida.

So, if you're roaming around on Florida's beaches and barrier islands from November through March, keep an eye open for a diminutive, fast-moving, sandy-hued, orange-legged bird. If you see one, congratulate yourself on having spotted a rarity — the piping plover.

Lenela Glass-Godwin is the nongame education specialist in the Commission's south regional office. She conducted her master's research on piping plovers in Texas.

Female piping plovers lay a clutch of four eggs (above) in a shallow depression in the sand. A tiny chick (below) blends perfectly with its drab surroundings.



ILLUSTRATIONS BY PEGGY PERKERSON

Piping Plover Recovery Team Needs Your Help

In late January, a small army of professional biologists and volunteer bird watchers will conduct counts of piping plovers on the birds' wintering grounds across the southern U.S. If you locate, identify and count any piping plovers on Florida's coast during the last two weeks of January, please send details of your observations, including a map showing where you found the pipers, to: Ms. Janice Nichols, U.S. Fish and Wildlife Service, 75 Spring Street SW, Room 1282, Atlanta, GA 30303.

Daryl's First Hunting Season

By Mark Fisher

Hunters often are accused of being a strange breed. They dress, act and even smell funny. Their clothing often resembles a bush or a tree. They wake up at 3 a.m. and sit in a tree until nightfall. Often they reek of skunk urine or doe scent.

To the uninitiated, I suppose all this could seem a little strange. But according to the National Rifle Association, 20 million Americans hunt, and every year new hunters join the ranks (no pun intended). Many new hunters are sons and daughters of veteran hunters.

For hunters who train their children in the sport, teaching safe gun-handling habits and ethical hunting practices is a serious responsibility. In 1984, the North American Association of Hunter Safety Coordinators conducted a survey that indicates most hunting injuries and fatalities are caused by young hunters. Additionally, home shooting accidents involving children using their parents' guns, ▷

GFC

which resulted in Florida's trigger-lock law, challenge hunters to set the example concerning gun safety. Anti-hunting activity in Florida, such as opposition to the special hunt during the Everglades deer crisis in 1982, youth deer hunts and limited alligator hunting, calls for hunters to be especially vigilant in pursuing game in a sporting and ethical manner. A large number of people from urban environments, unaccustomed to hunting and hunters, coupled with a tiny minority (3 percent) of resident hunters in Florida make this state vulnerable to anti-hunting movements.

When introducing someone, young or old, to hunting, veteran hunters must provide a proper, consistent example by handling guns safely, adhering to hunting regulations, and respecting the outdoors and game pursued. Considering the task of training a new hunter to be safe and ethical, I remember how a friend of mine taught his son to be a hunter.

Steve is an avid hunter, and Daryl, his son, was eager to follow his father's footsteps into the woods. Steve waited until Daryl demonstrated enough maturity, responsibility and character to be a safe hunter. Then he presented his son with a used .30/.30 and told him this would be his first deer season.

Steve had always taught Daryl to treat guns with respect and caution. He knew that ignorance is dangerous and taught his son how guns function and what they can do. Daryl was an ardent pupil and never tired of his education in hunting skills and gun safety.

Finally, opening day arrived. I met them at their house for breakfast. Afterward, we headed to the truck in the pre-dawn darkness. Bubbling with excitement, Daryl swung his unloaded rifle around and put it in the truck. Unfortunately, he inadvertently pointed the barrel of the rifle at me in the process.

Steve immediately took the .30/.30 from his son and informed him that next year would be his first hunting season. Daryl retreated to the house, in tears, to await our return.

Granted, Daryl was heartbroken, and his punishment was stern. Steve never compromised with his son concerning gun safety. He knew Daryl had many hunting seasons ahead of him and made him wait another year to cement habits that might prevent a hunting accident in Daryl's lifetime.

An attitude like that is part of the legacy of hunting. After going through his father's hunting training, Daryl is safer in the field than some hunters two or three times his age. And you can bet that Daryl's children will be just as responsible.

As an experienced hunter, take the time to be a mentor to someone who's just learning the sport. Instill an attitude of safety with a gun, love of the outdoors and respect for the game pursued. Refer to the tips below as you tutor a new hunter.

Training

- **Never believe that keeping students in the dark about guns will prevent accidents. Ignorance is not safety.**
- **The intent of a shooting education is to produce a knowledge and respect of guns. A fear or ignorance of guns and their capabilities is dangerous.**
- **Realize that students may have developed misconceptions about guns from television or other sources.**
- **Demonstrate the destructive capabilities of guns by shooting a sealed jug of water or some other training aid.**
- **Training topics should include gun parts and operation, ammunition and function, proper storage and security, safe handling and shooting, marksmanship, target identification, and how to maintain guns.**

Safety Procedures

All hunters, novice or experienced, should complete the Florida Game and Fresh Water Fish Commission's free Hunter Education Course. The course places special emphasis on the safe handling of firearms, and the 10 Commandments of Gun Safety are an integral part of the curriculum.

1. **Treat every gun with the respect due a loaded gun.**
2. **Always point the muzzle in a safe direction.**
3. **Be sure the barrel and action are clear of obstructions.**
4. **Be sure of your target before you pull the trigger.**
5. **Unload guns when not in use.**
6. **Never point a gun at anything you do not want to shoot.**
7. **Never climb a fence or tree or jump a ditch with a loaded gun.**
8. **Never shoot a bullet at a flat, hard surface or water.**
9. **Store guns and ammunition separately.**
10. **Avoid alcoholic beverages before and during shooting.**

Here are some other tips all hunters should remember to ensure a safe hunting trip:

- **Be familiar with local regulations concerning the purchase, transportation, shooting and storage of guns and ammunition.**
- **Don't load a gun until you're ready to shoot.**
- **Make sure your gun functions properly, including the safety.**
- **Keep your finger outside the trigger guard until you're ready to shoot.**
- **Never pull the trigger of a loaded gun to check the safety.**
- **Be aware of how far ammunition can travel. A .22 short can travel up to 1.25 miles, a .30/.06 3 miles, shotgun pellets 500 yards, shotgun slugs ½ mile.**
- **Carry handguns with the hammer down on an empty chamber.**
- **Communicate with members in your hunting party. Determine zones of fire, individual locations and meeting places and times.**
- **Be sure your ammunition matches your gun.**
- **Carry only one caliber or gauge gun and just the one type of ammunition for it.**
- **Be familiar with and obey local hunting regulations.**
- **Wear high-visibility, hunter-orange clothing. This is the law for deer hunters and their companions on wildlife management areas. It's a wise practice for anyone who hunts.**

*[Editor's note: **Effective June 1, 1991, hunters born on or after June 1, 1975 will be required to complete a** hunter safety course before they may hunt with a firearm. For information on the Commission's Hunter Education Program, contact the nearest regional office at the address or phone number on page 48.]*

*Mark Fisher is completing a master of mass communication degree with a scholarship from the Outdoor Writers Association of America. He is a contributing editor for **Georgia Wildlife** and has written for **Field and Stream** and other publications.*

The Mighty "Li'l" .243

By Inspector Kyle W. Hill

"Psst...Dad, it's a deer — a buck!"

"Well," I whispered, "Don't just sit there, shoot!"

This was the scene one December morning as my 14-year-old son and I sat perched in tree stands in northwest Florida. We had our eyes glued to a grassy ridge connecting two cornfields. The area contained several heavily used crossings and active deer scrapes.

Travis was using my Winchester Model 70 in caliber .243. He aimed carefully and squeezed off a shot. The sharp report shattered the early morning quiet as I scampered down from my perch and hurried up the ridge. Had the rifle done its job?

Millions of hunters, young and old alike, have found the perfect whitetail medicine in a proven package that is easy on the shoulder and incredible in power. The mighty "li'l" .243/6mm centerfire cartridge, launching 100-grain ammo, works like magic when it comes to putting venison in the larder.

Without a doubt, any modern centerfire bullet of .24 or larger caliber, placed in the heart/lung area of a deer, will harvest cleanly. The question is how fast will the bullet work, and how far will the deer travel after it's lethally hit? In my experience, the .243/6mm anchors a deer more consistently than any other caliber.

Many classic deer calibers (.30-.06, .270, .280, 7mm) commonly used on deer often are thought of as compromise weapons. Traditionally, the owner has purchased this gun on sale at a discount store to hunt elk and other big game as well as deer. His rationale probably is that he won't have to buy another gun to go out west. Ninety percent of these hunters manage only a couple of treks west in a lifetime, and they must then shoot 100- to 200-pound whitetails year after year with the larger caliber. Shooting these calibers is not a pleasant experience for most individuals. Therefore, they don't spend as much time practicing and fine-tuning their skills as they would if the weapon was more fun to shoot.

Like any good craftsman, the hunter also should choose the most effective tool for the job.

On the other hand, a .243/6mm is not only a pleasure to shoot, it's accurate as well. With half the recoil of the .30 calibers, it makes practicing great fun! A hunter can actually hit a small target nearly every time and, with practice, can hit a dime-sized spot consistently at 100 yards. Additionally, you can fine-tune your scope without flinching or a hint of shoulder-bruising. If you can shoot a .22 accurately, you can also hit precisely with a .243/6mm.

When you shoot a 100- to 200-pound whitetail with a caliber designed for harvesting a 600-pound animal, there's a waste of power. The .243/6mm, 100-grain projectile was especially designed for shooting thin-skinned game no larger than deer. With the right bullets, it harvests deer with amazing consistency. I have even seen the occasion when a .243/6mm seemed to have *too much* power!

Why use more gun than you need for whitetails? It's just a matter of choosing the right caliber for the right job. Guns and calibers are tools that should properly match the job at hand. Using an elk cartridge on a whitetail makes as much sense as using a jackhammer to drive a thumbtack. It's a waste of power and sacrifices efficiency and effectiveness. Many good craftsmen are very choosy about the tools they use to complete their auto work or to handle carpentry chores. The hunter also should choose the most effective tool for the job. Bigger doesn't always mean better when it comes to effective calibers.

I have witnessed the shooting of many deer. While a .243/6mm cartridge equipped with the proper bullet usually anchors the deer on the spot, many times the deer hit with the .30-.06 or .270 will run 100 yards or more before going down. This is one important reason to use a .243/6mm. My hunting log shows that over a 17-year period, 90 percent of all deer taken with a .243/6mm have dropped immediately. The small number of deer that ran after being shot did not travel over 40 yards. How does the "tracking record" for your caliber compare with these results?

One important element for getting ▷

Remington
KLEANBORE PRIMING
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SUPER-X 20 CENTERFIRE RIFLE CARTRIDGES
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243 WIN
80 GRAIN PTD. SOFT POINT

BOB GREWELL

successful results with a .243/6mm is the bullet selection. I've often observed that some .243/6mm shooters have not had the same dramatic effects I've described. The difference can be traced to the ammunition used. First, you should use bullets no lighter than 100 grains. The exception is some of the fine-quality 95-grain bullets that are available for reloading.

Second, the bullet chosen *must have* a significant amount of exposed lead at the tip. This is the "pointed soft-point" bullet configuration that is produced by several manufacturers. I have used the Winchester 100-grain "power point" for the past 10 years with incredible results. There are others that work as well. Steer clear of those bullet types with only a small, flat piece of lead at the very tip. There must be at least one-quarter inch of exposed lead for the instant results the .243/6mm projectiles are capable of producing. In my experience with these calibers, the pointed soft-point bullet makes the difference between a deer that runs after being hit and a deer that is stopped immediately. Of course, proper shot placement is essential.

For those who say that .243/6mm "pea-shooters" won't cut the mustard on "big" bucks, I've got a room full of trophies, including a couple of 10-pointers at 180 pounds-plus to dispute that view. Many record-book deer have been taken cleanly with this caliber.

If you are satisfied with your present caliber, by all means stick with something that you have confidence in. But if you are less than pleased and are looking for the perfect combination, consider purchasing the .243/6mm. It is the ideal caliber for the entire family.

What happened that December morning? The deer went down at the shot. As I reached him, I announced the news to Travis. "It's a fine four-point! Congratulations on your first deer! We'll have venison chili tonight!"

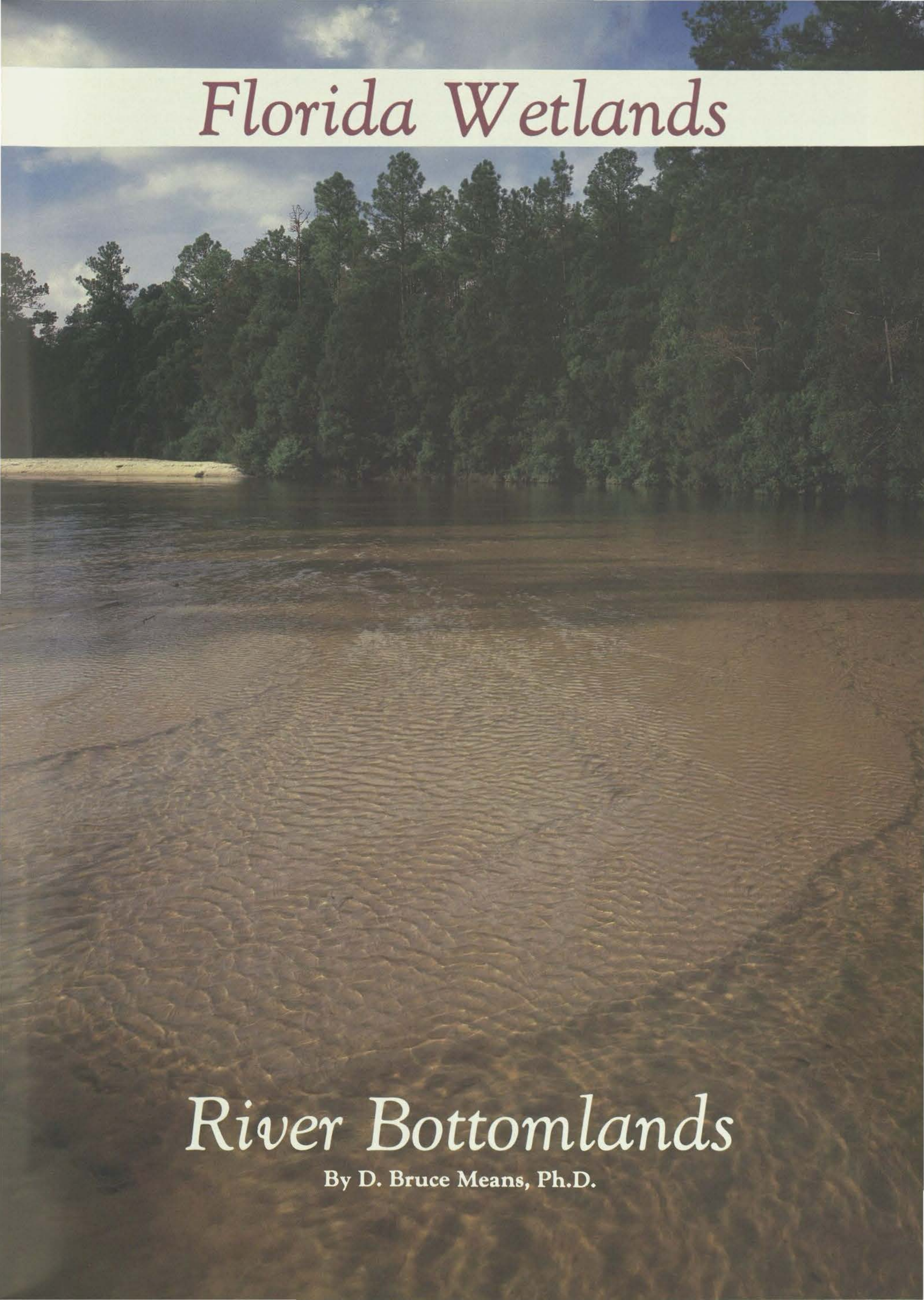
Inspector Kyle Hill is chief of the Bureau of Support Services for the Commission's Division of Law Enforcement.

BARRY MANSELL

KYLE HILL

Above: You don't need a large-caliber rifle to take a Florida deer like this. Below: Travis Hill with a four-point buck taken with the mighty "li'l" .243.

Florida Wetlands



River Bottomlands

By D. Bruce Means, Ph.D.

Mother Nature must be amused at our attempts to classify her.

For example, if parts of a river-valley bottom were inundated with water for up to a month each year, we'd call it a wetland. This would seem even more logical if the water's flow created the habitat. Yet, plants that prefer dry soil conditions, such as sparkleberry, wild olive, yaupon and live oak, often grow on higher places of many Florida floodplains.

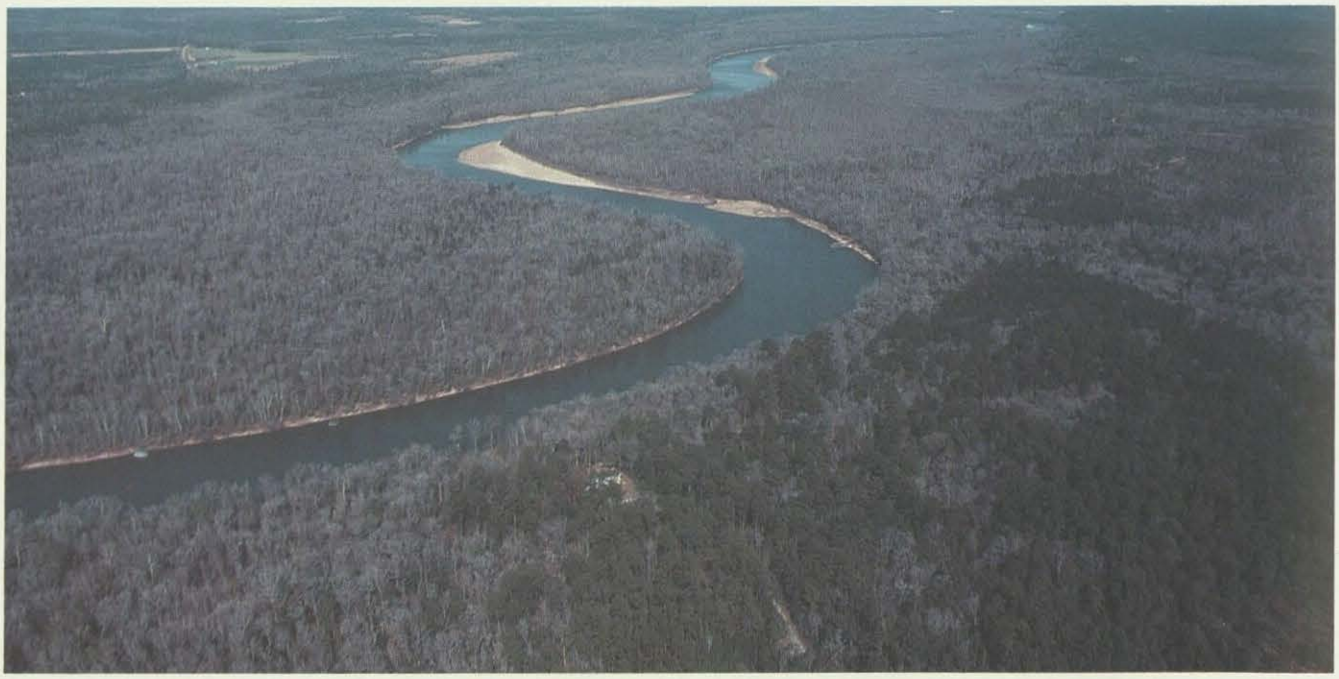
This is possible because Florida rivers, like all rivers, seasonally spill out over their low-water channels. As they do, they carry deposits of sand which build up to form levees. These high places, therefore, tend to have porous, sandy soils, while the low places are formed by the accumulation of silt, clay and organic material. Many upland plants that are tolerant of dry soil conditions grow on levees, even though these high, dry sites are periodically flooded. During low-water periods you can walk around in levee forests and not realize water flows there regularly.

The most obvious wetlands in river floodplains are those found downhill from levee tops. During high-water periods, the lower slopes and interlevee flats of floodplains hold water the longest. Studies of Florida's river floodplain plant communities reveal that the annual hydroperiod — the percentage of time that water stands on a site — is a major factor governing the species composition of floodplain plant communities. For example, the Apalachicola River's forest community of water hickory, sweetgum, overcup oak, green ash and sugarberry dominates sites that are saturated or flooded 5-30 percent of the time. The wettest river floodplain forest type, the cypress-tupelo swamp, may be inundated more than 50 percent of the time.

But river bottomland forests are much more complicated than that. The Apalachicola River's floodplain averages about 1 to 1½ miles wide for 25 miles below the Jim Woodruff Dam. This portion of the river carries almost the same volume of water as the 3- to 5-mile-wide floodplain in the lower third of the river. During high-water stages, a large volume of water rushes relatively deeper and more speedily through the upper third of the river valley, but moves more slowly when it spreads out over the wider floodplain in the lower third of the river. The greater energy in the faster-moving water upstream piles up sand higher and allows for a greater percentage of drained soils during low-water periods. The water hickory/sweetgum, etc. forest type is three times as prevalent in the upper two-thirds of the river valley than in the lower third. Along the lower third of the river, the low-lying cypress-tupelo forest occupies five times more floodplain than it does upstream.

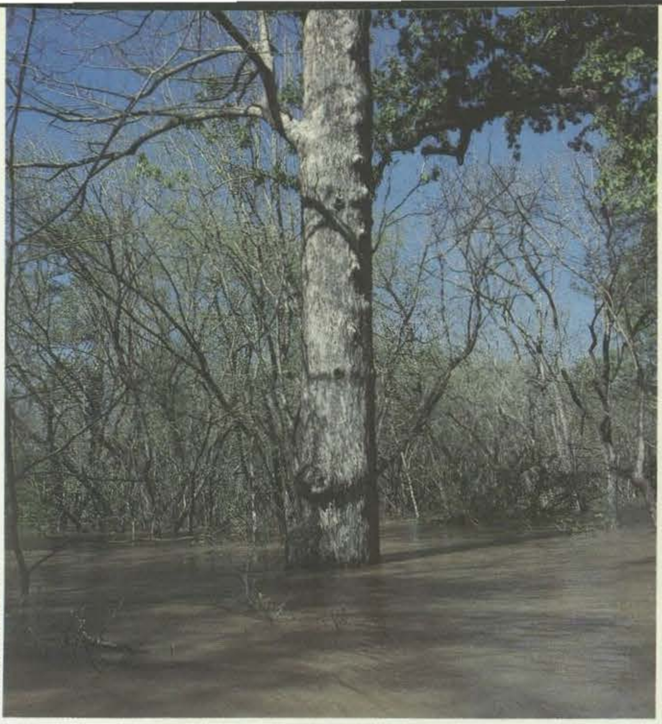
Water velocity and its erosive action upon the banks are highest along the outside bends of the open water channel, especially during high-water periods. That is why these bends usually are undercut, and trees lean or fall into the water. The sediments removed from one outside bend are deposited downstream on the next inside bend or "point bar." The river channel migrates back and forth across the floodplain in the direction of all its outside bends. The new sediments deposited on point bars offer open space where plants can colonize. In time, plant succession leads to the development of a certain type of floodplain forest, depending upon the relative elevation of the new deposit. (Remember, the elevation governs the length of time plants growing there will be inundated

PAGE 11 PHOTOGRAPH BY JAMES VALENTINE



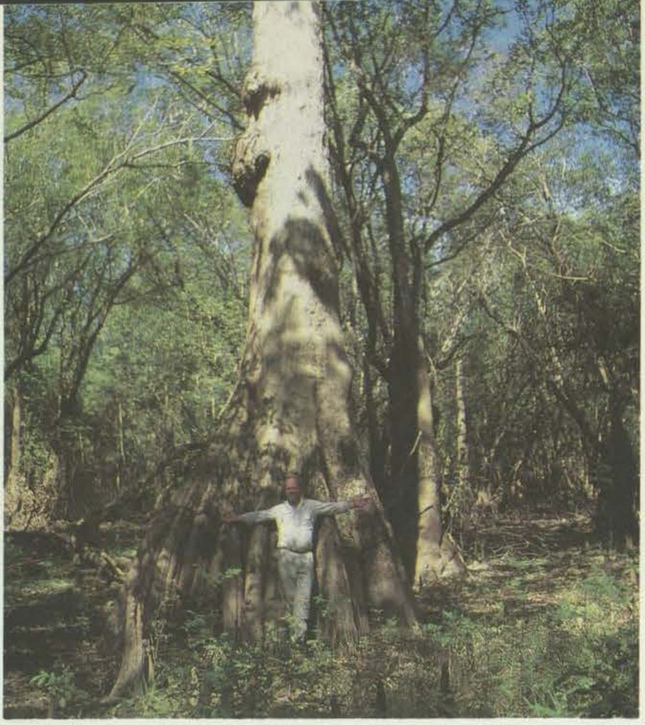
Apalachicola River looking upstream from Torreya State Park.

D. BRUCE MEANS



D. BRUCE MEANS

High-water floodplain — Sutton's Lake.



D. BRUCE MEANS

Low-water stage — Sutton's Lake.

annually.) Over the centuries, the open water channel meanders all over the floodplain from one valley sidewall to the other, sometimes creating cutoff loops known as oxbow lakes. These eventually fill in with silt and clay left behind after high-water periods and become cypress-tupelo swamps.

River bottomlands are among the many types of Florida's wetlands — places in which water stands some of the time each year. Forested wetlands are simply swamps. Most people are unaware that the bed of a river includes more than the land underlying the open water channel. The open water channel is really only that part of the bed that carries water during low-water stages and is more properly called the low-water channel. The complete bed of a river includes the high-water channel, which is often many times wider than the low-water channel, and usually is forested. Water regularly flows throughout the high-water or "floodplain" channel at least once a year, hardly the unusual event that the word "flood" connotes.

This regular inundation creates the distinctive wetlands of river bottomlands — another term for floodplain or high-water channel. The plant communities below the exceptional high and dry sandy sites are dominated by plants that are specially adapted for tolerating regular inundation by river water. Water hickory, overcup oak, diamond-leaf oak, planer tree and many others are restricted to floodplain habitats. So, too, are the bald cypress and tupelos of the most continuously inundated parts of river bottomlands. If a riverine habitat is inundated by deeper and more continuous water conditions, it is usually an aquatic habitat, not a wetland.

The barred owl, red-shouldered hawk, swallow-tailed and Mississippi kites all eat reptiles and amphibians, and all forage in floodplain hardwood forests.

Wildlife

River bottomlands provide special habitats supporting a great deal of equally special wildlife. Many animals live in floodplain wetlands exclusively, for the water trapped there seasonally is ideal for animals with an aquatic larval life. Have you ever heard the summertime roar of the river swamp frog? You might think someone started up a chainsaw nearby. This frog's name clearly reflects its habitat proclivities. To hear a breeding chorus, you must be in the floodplain during an evening thundershower, not an activity that many people yearn to experience. But if you did this in any river floodplain west of the Ochlockonee River, you would also hear the breeding call of the river-restricted bird-voiced treefrog. It emits a series of high-pitched, one-note whistles and sounds very birdlike. Similarly, from the Ochlockonee River westward you can hear the river-and-stream-inhabiting northern cricket frog and upland chorus frog. Another species to listen for is the Fowler's toad, common in floodplains west of the Choctawhatchee River.

If you feel a compulsion to rake around in the ankle- to knee-deep fluid muck that accumulates in the upper regions of floodplains where small tributaries deposit a load of rotting leaves, you might encounter the rare one-toed amphiuma, a pencil-like salamander found mainly in north Florida. Or, you might turn logs and be amazed to see fat marbled salamanders, jet-black with enamel-like white saddles across their backs. There, too, lurks the 4-inch-long, black-and-yellow-striped long-tailed salamander, the salmon- ▷

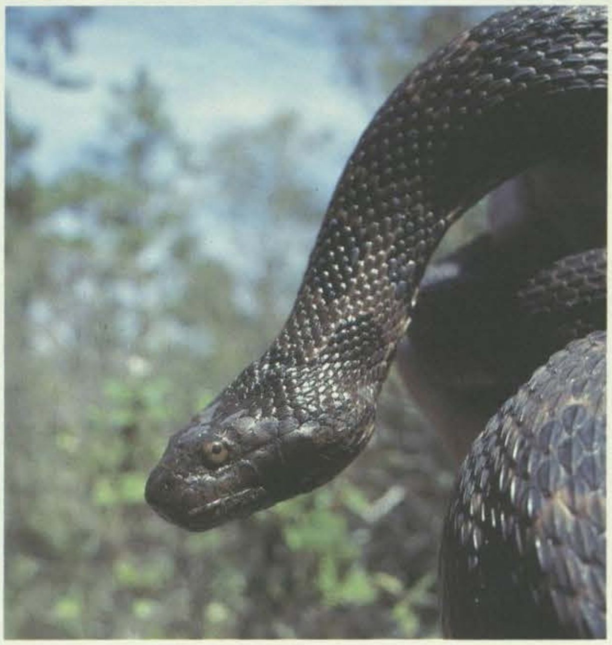
bellied mud salamander and the extremely rare four-toed salamander. These are the principal Florida amphibians that are confined to floodplains, but floodplains are full of other, more ubiquitously occurring salamanders and frogs. All these amphibians make lots of food for predators.

While the red-bellied water snake is confined to river floodplains, the cottonmouth, brown water snake and banded water snake all benefit from eating the frogs in floodplains. So, too, do several birds of prey. The barred owl, red-shouldered hawk, swallow-tailed and Mississippi kites all eat reptiles and amphibians, and all forage in floodplain hardwood forests. Lots of mammals utilize floodplains — raccoons, gray squirrels, mink, otter and opossums — but none are restricted to these habitats. On the other hand, the beaver has made a strong comeback, after nearly being wiped out early in this century by trapping. It flourishes in the floodplains of small streams and in the backwater regions of large river bottomlands.

River bottomland hardwood forests and swamps are very important to birds. The extinct ivory-billed woodpecker was highly dependent upon this type of habitat and is thought to have disappeared largely because the large, old trees that furnished them food and lodging were long ago cut. The wood duck breeds and raises young in the backwater sloughs of floodplains. A whole host of herons and egrets also take advantage of this rookery habitat when it's wet enough. If you want to see the lovely male prothonotary warbler in breeding plumage, head for a river swamp. During both spring and fall bird migration, river bottomland hardwoods are the place to go to see droves of migrating warblers and thrushes, birds of the deep forests.

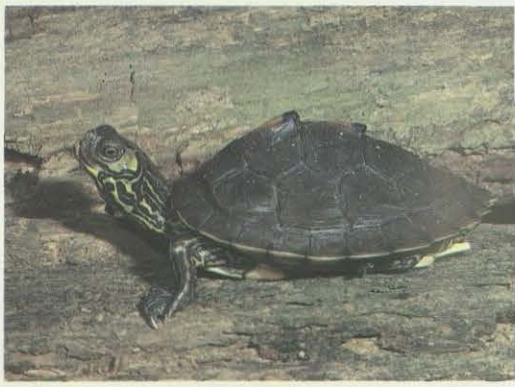
Types Of Rivers

There are at least three main types of rivers: alluvial, blackwater and spring-fed. Panhandle Florida is where all of this state's classic alluvial rivers occur. The rivers' drainage basins originate deep in the continent and carry muddy water laden with silt and clay. The shed leaves and twigs of each year's plant growth provide a huge bank of rotting vegetation in the floodplains of rivers, from which organic acids are leached during rains. The muddiness of alluvial rivers masks these darkly stained waters, but in small river basins where there exists little clay and lots of sand, the black water stands out sharply against the white sands of the river bed and banks. Rivers such as these are called blackwater rivers, a second type of river that runs clear but is tea-stained, highly acidic and relatively nutrient-impoverished


D. BRUCE MEANS

The brown water snake is the most common snake seen along the edge of Florida's rivers.

Bird-voiced treefrog.


BARRY MANSELL

Barbour's map turtle.

Have you ever heard the summertime roar of the river swamp frog? You might think someone started up a chainsaw nearby.

when compared to other river types.

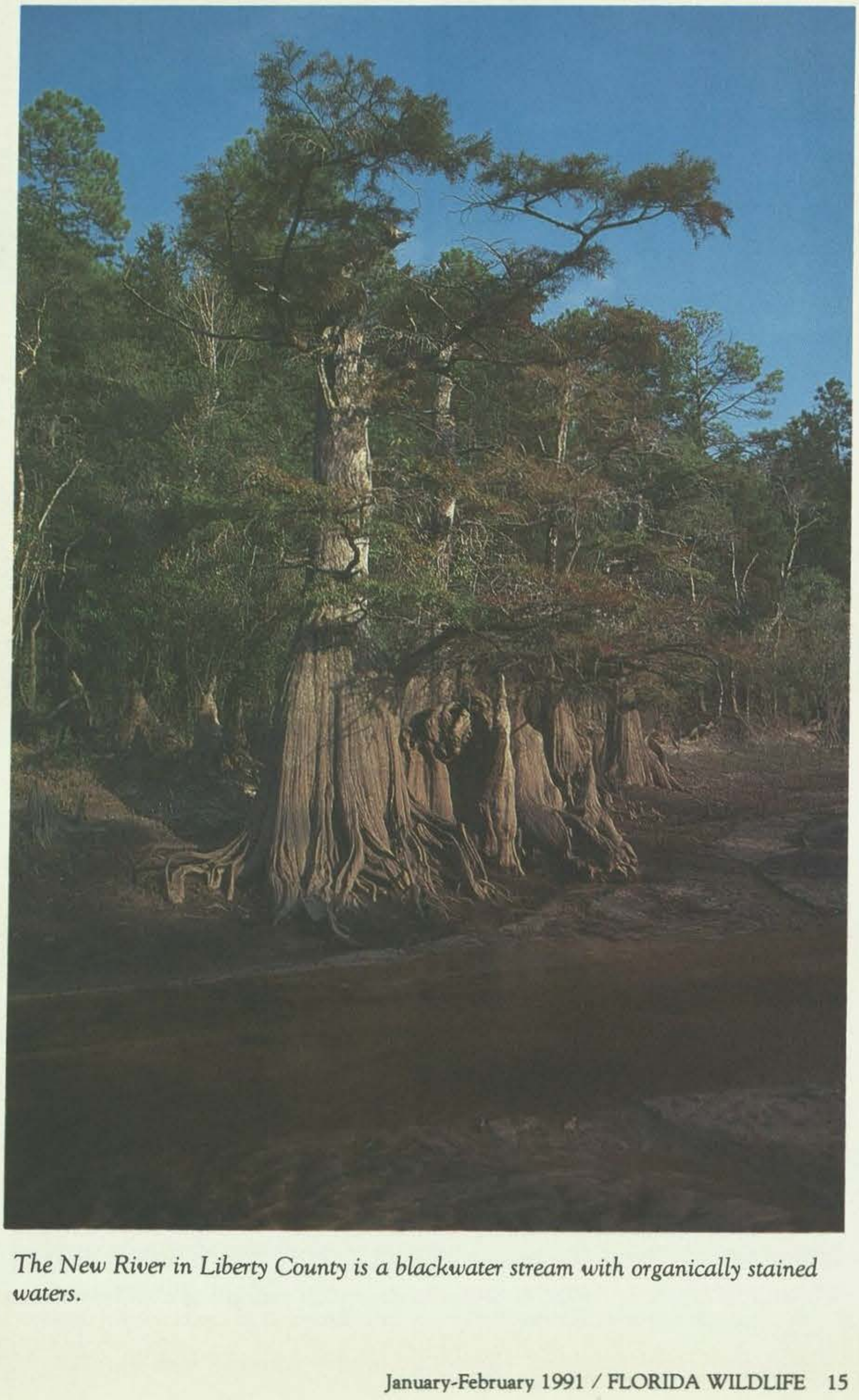
The third kind of river is fed from deep waters of the Floridan Aquifer. Groundwater circulating in subterranean passageways in the limestone underlying most of Florida eventually pushes itself to the ground surface to form the spring-fed rivers such as the Silver, Wakulla, Wacissa, Crystal, Itchetucknee and Wekiva rivers. These waters usually are crystal clear, cold, neutral in acidity and laden with mineral salts from the dissolving limestone. During very heavy rains, however, these rivers will blacken briefly from the organic acids flushed out of the adjacent swamps. Blackwater and spring-run streams are commonest in peninsular Florida, where there are no alluvial rivers.

As you might expect, the type of river has a lot to do with the ecology of its floodplain. The bottomlands of alluvial rivers are muddy because of the silts and clays. They are also rich in nutrients, and trees grow exceptionally fast there. While fine sediments are transported into the floodplains of alluvial rivers during high-water stages, partially decomposed vegetable matter is flushed downstream by the ton, eventually winding up in the estuaries at the coast. These vegetable fragments and the chemical nutrients that are leached from the rotting floodplain litter are vitally important as food and nourishment for the highly productive salt marshes and waters of the estuaries. The entire food web from bacteria and algae to shrimp, oysters, crabs and fish is fed by these nutrients, demonstrating how interconnected our world can be. Changes in water quality, trees or the sediment supply of a river floodplain a hundred miles inland from the ocean can have a crucial impact upon the health of coastal fisheries.

The volume of water that runs down the valley of Florida's alluvial rivers during high-water stages is about 10 times the volume of the river during average low-water conditions. This relationship of a river is important in the ecology of the whole riverine ecosystem. For instance, the movement of nutrients into and out of the floodplain can be accomplished only by the flushing action of sufficient quantities of water. One major characteristic of spring-run rivers is their relatively constant flow. They have a 2:1 ratio or less, meaning that adjacent floodplains are very narrow. Without periodic flushing and drying, these habitats are more homogeneous in their water regimes and topography, and thus their swamp forest species composition. Sweet bay magnolia, bald cypress, dahoon holly, red maple, Carolina ash, black gum and cabbage palm are typical trees in spring-run bottomlands.

Florida's blackwater rivers and streams are also remarkable. Their high- to low-water ratio can run to above 100:1, but this doesn't mean that their floodplains are necessarily 10 times wider than those of alluvial rivers. Actually, the ratio is so high because the low-water levels of these streams get 10 times lower than those of alluvial rivers. Many ▷

D. BRUCE MEANS



The New River in Liberty County is a blackwater stream with organically stained waters.

blackwater rivers even dry up in some years. Their high acidity, low nutrient content and occasional drying make blackwater rivers and their floodplains the least biotically diverse of all Florida river types, but most of Florida's rivers are mixtures of all types. The Apalachicola, the state's largest alluvial river, receives the spring-run waters of the Chipola and the blackwaters of many small streams along its lower 50 miles. The Suwannee River is a large blackwater river as it exits from the Okefenokee Swamp, but along its Florida course to the Gulf to Mexico, it receives large inputs from many large, spring-run streams.

There are two other important facts that distinguish Florida's rivers and their bottomlands. First, the rivers of central and south Florida are generally in their high-water stages May through September, when their catchments receive most of their annual complement of rain. But by contrast, all the big rivers of north Florida (Escambia, Yellow, Choctawhatchee, Apalachicola, Ochlockonee and Suwannee) tend to be in their high-water stages between January and May. This is in spite of the fact that their catchments also receive most of their annual rainfall between May and September. What explains this paradox?

The farther south you travel in Florida, the drier the winters are. Rivers run low then, and little water is available for runoff. North Florida's rivers, however, experience a regular winter rainy period (January-April) associated with frontal systems. Even though summer rains provide more rainfall on the catchments than do winter rains, evapotranspiration often exceeds rainfall in the summer when trees are pumping proportionately more water back into the atmosphere than they do in winter. In winter, trees are dormant so that, compared to summer rains, a disproportionately large amount of winter rainfall runs off downstream. The mouth of the St. Johns River actually lies north of the mouths of the big panhandle rivers. This river's high-water period is in summer because its catchment penetrates far south into the peninsula.

Many plant and animal species that live in north Florida floodplains do not range very far down into the peninsula. Among the important river bottomland trees found in panhandle Florida, the following species do not range far into the peninsula: sycamore, river birch, black titi, water tupelo, Ogeechee tupelo, planer tree, overcup oak and others. The absence of dominant trees of northern bottomlands allows trees that are not dominant up north to become so down the peninsula. American elm, red maple and dahoon holly, for instance, are present but not dominant in panhandle rivers, but in the peninsula's Peace River they often occur in monospecific patches.

We need to know much more about Florida's extensive and valuable river bottomland wetlands. Few are studied in detail, but we already know how important they are as habitats for fish and wildlife, for large volumes of all-important fresh water, as sources of nutrient input to coastal fisheries, and for much-needed recreation space. Through the state's Save Our Rivers program, the title to much bottomland acreage has been clarified so that many thousands of acres now are under the stewardship of Florida's water management districts.

Being under public ownership does not guarantee that these lands will be managed in the most ecologically sound way. But they do belong to us, as does the responsibility to protect them for future generations to enjoy and appreciate.

D. Bruce Means, Ph.D. is a professional ecologist and the president and executive director of the Coastal Plains Institute. His next feature in FLORIDA WILDLIFE will be "Florida's Steepheads: Unique Canyonlands."

D. BRUCE MEANS

Wakulla Springs State Park: The Wakulla River is an example of a spring-run river.

JAMES VALENTINE

Blackwater River State Park

By Karen Lee Tucker

While Florida is best known for its scenic coastline, interior areas of the state show another facet of its natural beauty — lush, green forests and meandering rivers. One of the few remaining unspoiled rivers in Florida, the Blackwater River runs 58 miles southwest from its headwaters in the Conecuh National Forest in Alabama through the Blackwater River State Forest to Blackwater Bay in Milton.

On the southern boundary of the vast 183,153-acre state forest lies Blackwater River State Park, encompassing 590 acres of varied terrain. Upland pine forests, floodplain forests, oxbow lakes and swamp attract an equally diverse collection of flora and fauna.

Among the most appealing features of the park are the large, white sand bars found at each bend of the river. Washed by the river's frequently shifting path, the fine, white sand is a striking contrast to the dark, tea-colored water of the Blackwater River. Canoeists find the wide sand bars perfect for picnicking or sunning and often spot tracks of wild turkey, bobcat and deer.

The diversity of Blackwater River State Park's terrain is characterized by the occurrence of two particular species — one plant, the other animal — each of which requires a habitat unlike the other. These habitats — wetlands and high pinelands — are just a sample of the diverse biological communities that share this area.

The endangered Panhandle lily is found on the black, mucky soils typical of the edges of the banks of Blackwater's creeks and streams. According to the Florida Natural Areas Inventory, populations recently discovered in the park are among the largest on state lands. The lily is easily recognized by its long, slender stem topped by a large, fragrant, yellow flower with reddish-brown spots. A distinctive beauty, the Panhandle lily's decline is attributed to loss of habitat, over-collection by admirers and other destructive pressures. This endangered plant was featured in the Delicate Balance column of the September-October 1990 FLORIDA WILDLIFE.

In contrast, the gopher tortoise prefers the higher elevations in sandy pine forests (sandhills). A species of special concern, gopher tortoise populations have dwindled to an estimated 30 percent of their original numbers. Gophers are found in sandy regions of the southeast, with most occurring in portions of north-central Florida and southern Georgia. Many home builders also choose the high, dry, ▷

sandy environment, causing a decline in tortoise populations as their habitat succumbs to development.

Gopher tortoises are accomplished burrowers, digging tunnels as long as 35 feet. Wide enough for the animal to turn around at any point, burrows commonly are shared with gopher frogs, indigo snakes and rattlers. The gopher tortoise is usually 6 to 9 inches in length and has a brown shell with a dull-yellow underside.

Because of its abundant vegetation, Blackwater River State Park is home to many other animals, including song birds, raptors, reptiles and amphibians. In spring, the red-shouldered hawk finds the park suitable for nesting, while bluebirds settle in for the winter. An observant visitor may spot the tracks of wild turkey, deer or gray fox. River otters, snapping turtles, alligators, raccoons and a variety of birds are among the resident wildlife populations.

The Florida Park Service has acquired a treasury of natural resources to be maintained for us and for future generations. The value of these holdings lies not only in their protection but also in the diversity of outdoor experiences they offer. Blackwater River State Park preserves a rich part of Florida's natural treasury by serving as sanctuary for a multitude of wildlife, trees and plants. Its cool, tannin waters and the accompanying beauty of the landscape invite you to take time to discover "the Real Florida" in the Panhandle.

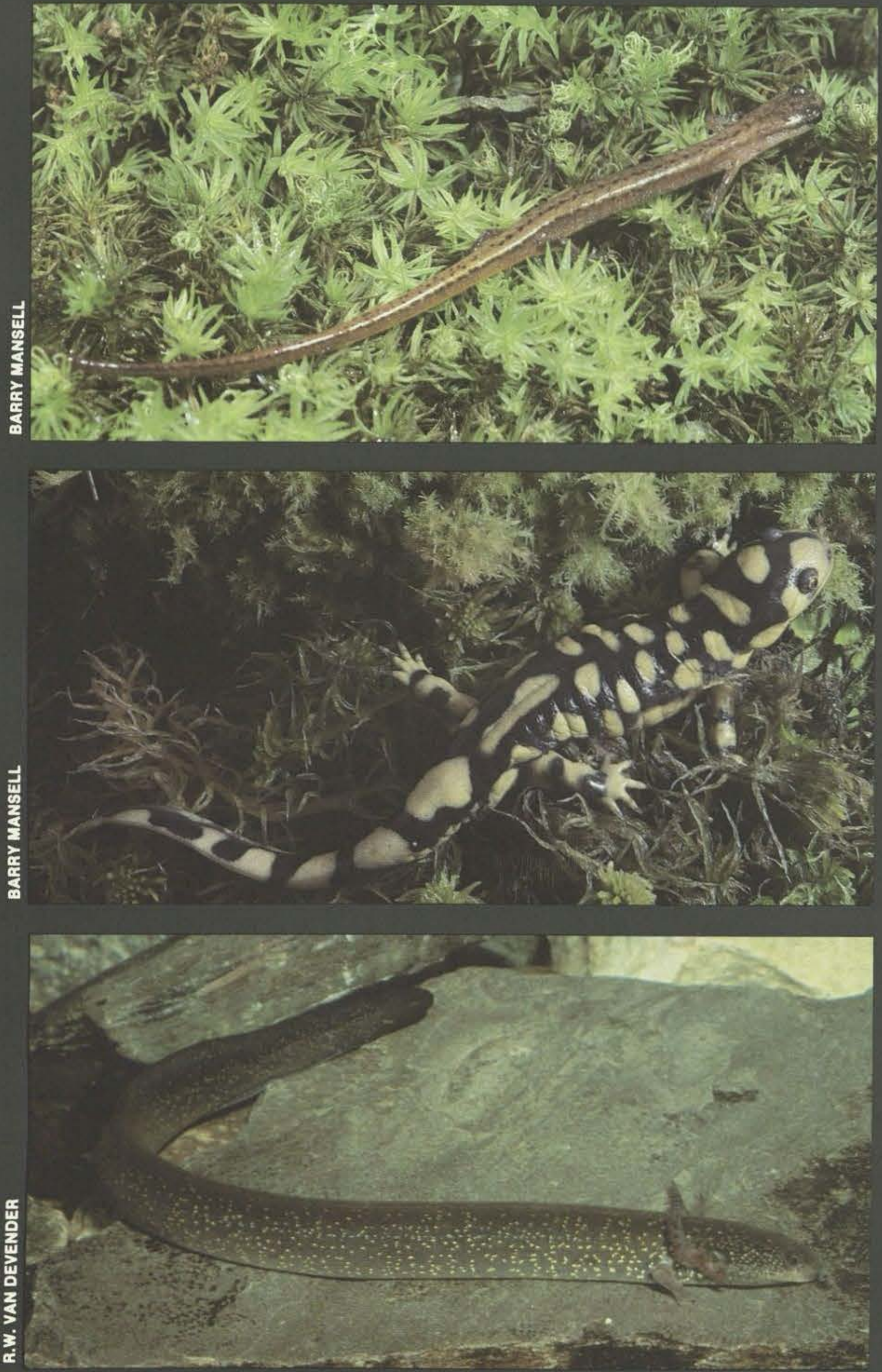
Blackwater River State Park is located 15 miles northeast of Milton off U.S. 90, north of Interstate 10. For a guide to this and other state parks in Florida, write to: State Park Guide, Division of Recreation and Parks, Mail Station 525, 3900 Commonwealth Blvd., Tallahassee, FL 32399-3000; or call (904) 487-2319.

Karen Lee Tucker is the information specialist for the Department of Natural Resources district office in Panama City.

JAMES VALENTINE

Salamanders of Florida

By Paul E. Moler



BARRY MANSELL

BARRY MANSELL

R.W. VAN DEVENDER

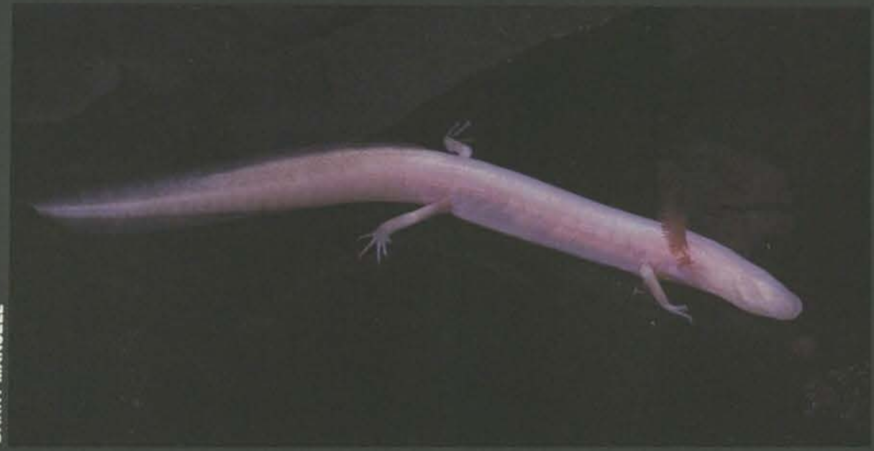
From top to bottom: dwarf salamander, tiger salamander and greater siren.

Of the two groups of amphibians in Florida, you're more likely familiar with frogs. There are 27 native species of frogs, including toads, in our state. The other group, salamanders, however, is much more secretive. Although there are at least 25 species native to Florida, most of them are rarely seen by the casual observer.

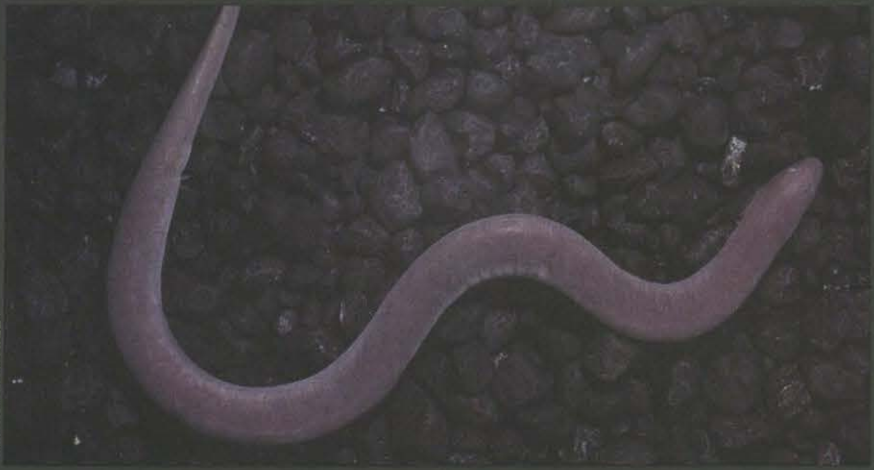
Salamanders are often known locally as "spring lizards" because of their superficial resemblance to lizards and the fact that many species frequent small springs, seeps and other moist habitats. True lizards, which are reptiles, have dry, scaly skin and claws on their toes. Most salamanders have smooth, moist skin, and they never have true claws. While lizards emerge fully developed from shelled eggs laid on land, salamanders lay unshelled eggs, usually in or very near the water.

The life histories of most of our salamanders include an aquatic, gilled larval stage, somewhat comparable to the tadpole stage of frogs. Depending upon species, this larval stage may last from two months to two years. The young salamanders then lose their gills and transform into terrestrial or semiaquatic adults. Seven of our species never transform, remaining instead in the aquatic larval condition throughout their lives. One other species, the slimy salamander, lays its eggs on moist land, and the young hatch without a free-living larval stage.

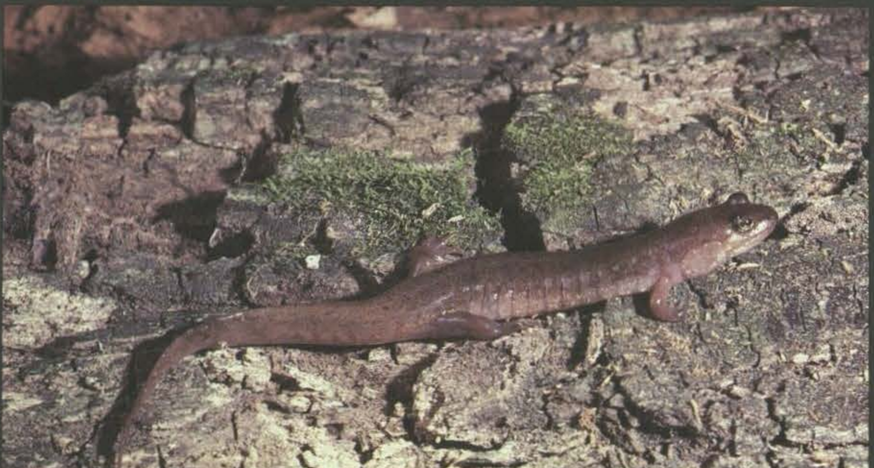
Most of Florida's salamanders are fairly small, ranging from the 2- to 3-inch dwarf salamander to the 10-inch tiger salamander. However, two aquatic species, the greater siren and the two-toed amphiuma, may reach lengths greater than 3 feet. These two large, eel-like species occasionally are caught by fishermen, who sometimes refer to them as "conger eels." Most salamanders, including the ▷


BARRY MANSELL

GEORGIA CAVE SALAMANDER *(Haideotriton wallacei) - Found in cave systems from Albany, Ga. to the vicinity of Marianna, Fla. Like many cave animals, these salamanders have no eyes and no skin pigmentation. This species is fully aquatic and retains gills throughout life.*


BARRY MANSELL

ONE-TOED AMPHIUMA *(Amphiuma pholeter) - A secretive species of the panhandle and upper Gulf coast of the peninsula. It lives in rich deposits of muck and reaches a maximum size of about 12 inches.*


BARRY MANSELL

SEAL SALAMANDER *(Desmognathus monticola) - Rarest Florida salamander, being known in Florida from only one small area north of Pensacola. Four species of dusky salamander may be found in Florida. Two of our other dusky salamanders are also found in Florida only in portions of the panhandle, but the southern dusky salamander (D. auriculatus) is found in swampy habitats south to the vicinity of Tampa.*

impressive greater siren, are completely harmless. However, large amphiumas are capable of inflicting a painful bite when carelessly handled. Actually, handling the large sirens and amphiumas, carelessly or otherwise, is difficult, for they are extremely slippery.

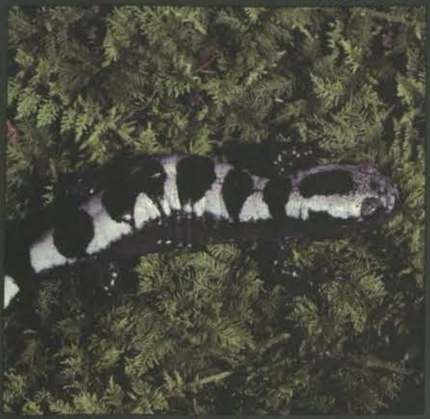
A few salamanders deviate significantly from the standard body form or appearance. The small Georgia cave salamander, which lives in permanent darkness, is pure white and has no eyes. The fully aquatic sirens and dwarf sirens have lost their rear legs but have retained the front ones. The amphiumas possess comically small legs, which have been reduced in the one-toed amphiuma to little more than a single toe.

Several species of salamanders are long-lived. Some do not reach sexual maturity until they are 5-7 years of age, and a few have survived for 25-55 years in captivity.

The greatest diversity of Florida salamanders is found in the panhandle. Only 14 species extend into the peninsula south of the Suwannee River, and only six of these occur very far south of Tampa and Orlando. Most of the species which do extend into the southern peninsula are permanently aquatic, including our largest salamanders, the sirens and amphiumas.

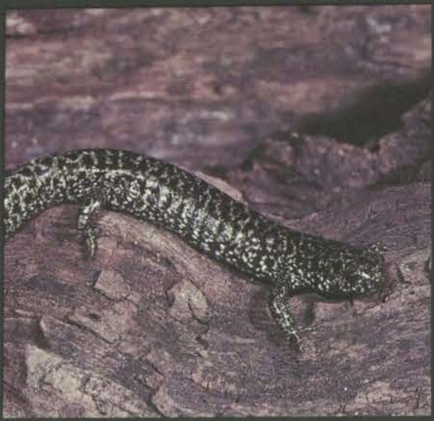
Although salamanders are seldom seen, they nonetheless are a vital part of the natural systems of Florida. Larvae of some salamander species strongly influence the species composition of local frog populations because they prey on tadpoles. Also, salamanders and frogs are cornerstones of the vertebrate food chain, providing important food sources for fish, alligators, turtles, snakes and wading birds. Such secondary benefits aside, the diversity of form and life history exhibited by Florida's tailed amphibians makes them among the most interesting of Florida's creatures.

BARRY MANSELL



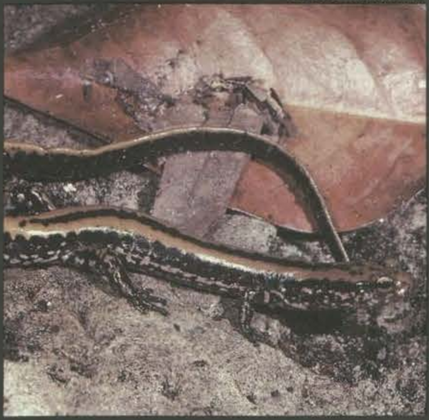
MARBLED SALAMANDER
(Ambystoma opacum) - Found in river floodplain habitats of the panhandle. Light markings of females are gray; those of males white.

BARRY MANSELL



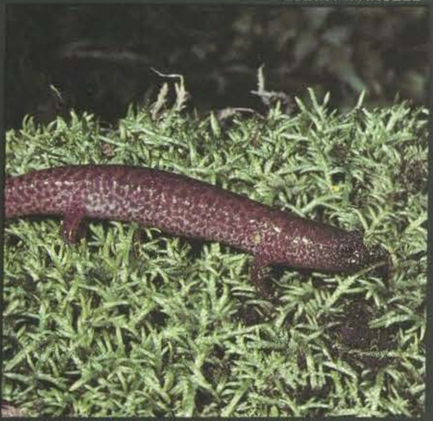
FLATWOODS SALAMANDER
(Ambystoma cingulatum) - Occurs in low pine flatwoods habitats of north Florida. Sometimes lays its eggs in dry flatwoods depressions.

BARRY MANSELL



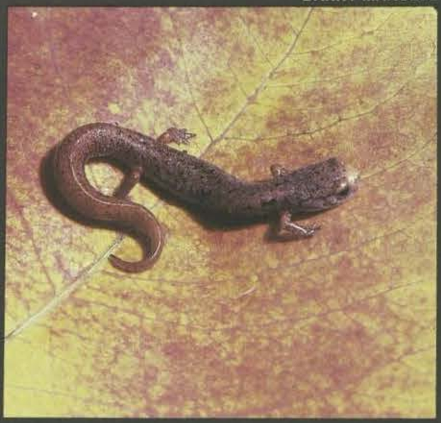
THREE-LINED SALAMANDER
(Eurycea longicauda) - Found from Tallahassee westward in streamside habitats. Reaches length of about 6 inches.

BARRY MANSELL



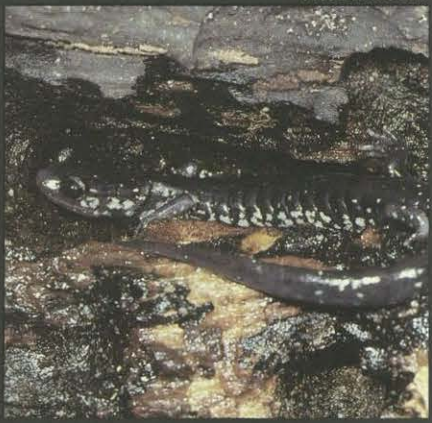
RED SALAMANDER
(Pseudotriton ruber) - Common along smaller streams of the panhandle. Length about 6 inches.

BARRY MANSELL



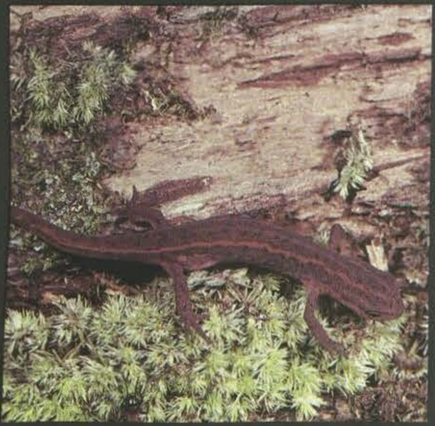
FOUR-TOED SALAMANDER
(Hemidactylium scutatum) - Rare. In Florida, known only from wooded seeps along tributaries of Ochlockonee and Choctawhatchee rivers.

PAUL E. MOLER



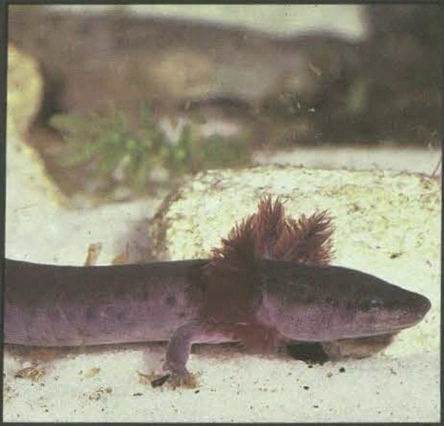
SLIMY SALAMANDER
(Plethodon grobmani) - Only Florida salamander with no aquatic larval stage. Eggs are laid in moist situations on land.

BARRY MANSELL



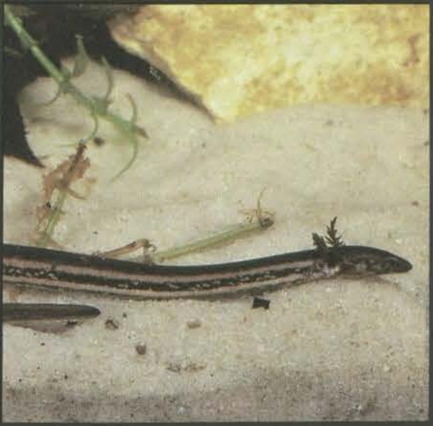
STRIPED NEWT
(Notophthalmus perstriatus) - Rare. From Orlando to Savannah and west to Tallahassee. Unlike other salamanders, newts have dry, granular skin.

R.W. VAN DEVENDER



ALABAMA WATERDOG
(Necturus alabamensis) - Found in rivers and larger streams from Tallahassee westward. May live for 20 years or more.

R.W. VAN DEVENDER



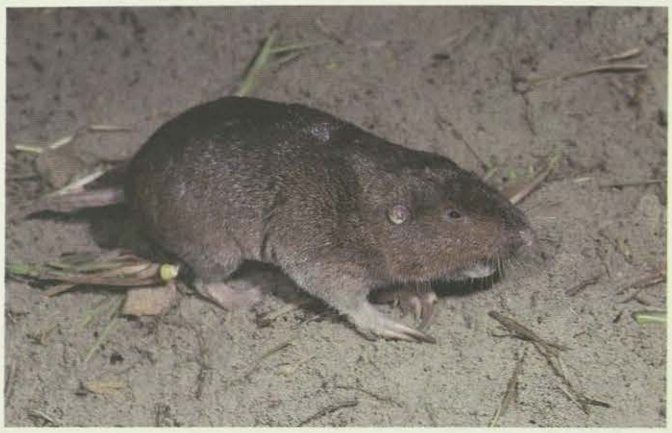
DWARF SIREN
(Pseudobranchus striatus) - Slender, aquatic species. Typically reaches length of 6-7 inches. Occurs throughout peninsula, west to Choctawhatchee Bay.

"The Salamander is a large mole, about half the size of a rat. It penetrates the earth in every direction, especially the pine barrens, which it throws up in the form of ant-hills."

— John Williams, ***A View of West Florida****, 1827.*

Pocket Gophers, Salamanders Too?

By Barry W. Mansell and Paul E. Moler



In modern scientific usage, the term "salamander" is applied to a group of scaleless, lizard-like amphibians characterized by soft, moist skin and usually a gilled, aquatic larval stage. However, early residents of rural Florida often applied their own names to various animals. Although many of these names are familiar, the local natural historians were not always constrained by the narrow views of Science. Hence names which scientists applied to a particular group of animals were sometimes applied by local residents to a totally different group of organisms. Such is the case with the "salamander" about which John Williams wrote 164 years ago.

Williams' "salamander" was instead a furry, burrowing rodent, known today as the southeastern pocket gopher (*Geomys pinetis*). It has been suggested that the name *salamander*, as applied to these creatures, may have originated as *sandy-mounder*, a reference to the pocket gopher's habit of depositing mounds of dirt, up to a foot high and 2 feet across, above its underground runways. Whatever the origin, pocket gophers are still known as "salamanders" in many parts of the rural South.

To confuse the issue even more, in Florida the term "gopher" usually refers to the gopher tortoise, which, like the pocket gopher, leaves behind a mound of sand excavated from its burrow. But the tortoise leaves behind an open tunnel with only one mound of sand, whereas the pocket gopher deposits clusters of sand mounds with no visible openings. Indeed, the small tunnels beneath the pocket gopher's mounds are usually packed with sand all the way back to the main tunnel, to prevent predators, such as snakes, from entering.

Pocket gophers are solitary. Typically, there are several mounds associated with the burrow system of each individual, giving the impression of much greater numbers than are actually present. If the mounds extend in a somewhat meandering line, they are usually the work of the male, whereas the mounds of the female more often are clustered into a two-dimensional array. The linear alignment of the male's tunnels enables him to intersect the burrow systems of several females.

The pocket gopher is highly adapted for its burrowing lifestyle. Its eyes and ears are reduced in size, and its stout forelimbs are equipped with strong claws for digging. Its skin is loose, enabling it to turn in its burrow more easily. Although pocket gophers occasionally venture onto the surface at night to forage for vegetation, they frequently burrow just below the surface, feeding on edible roots and tubers. The "pocket" in the name refers to a deep, fur-lined pouch on each side of the head. These pockets are used for transporting food.

Oddly, one of the most ecologically important activities of pocket gophers is also the source of much vilification. In the sandy soils typical of most of Florida, nutrients are rapidly leached from the surface by rainwater percolating downward through the soil. The burrowing activities of pocket gophers and gopher tortoises help maintain soil fertility by returning these leached nutrients to the surface. One study found that, in good habitat, pocket gophers may return more than 7,000 pounds of soil per acre to the surface each year. Unfortunately, these tireless efforts generally are not appreciated by those seeking to maintain immaculate lawns, pastures and fairways. In addition to maintaining soil fertility, the mounds of sand also provide bare, mineral seedbeds where young plants can become established.

But back to the "salamander." Where but in the colorful lore of the rural South could we find a turtle called a "gopher," a gopher called a "salamander," a salamander called a "spring lizard" or a "fire-eater," and a woodpecker called a "woodchuck?" In the face of such confusion, is it any wonder that Science has chosen to assign to each species an arcane but unique scientific name which is given only to that one species?

A Wood Duck Photo Essay

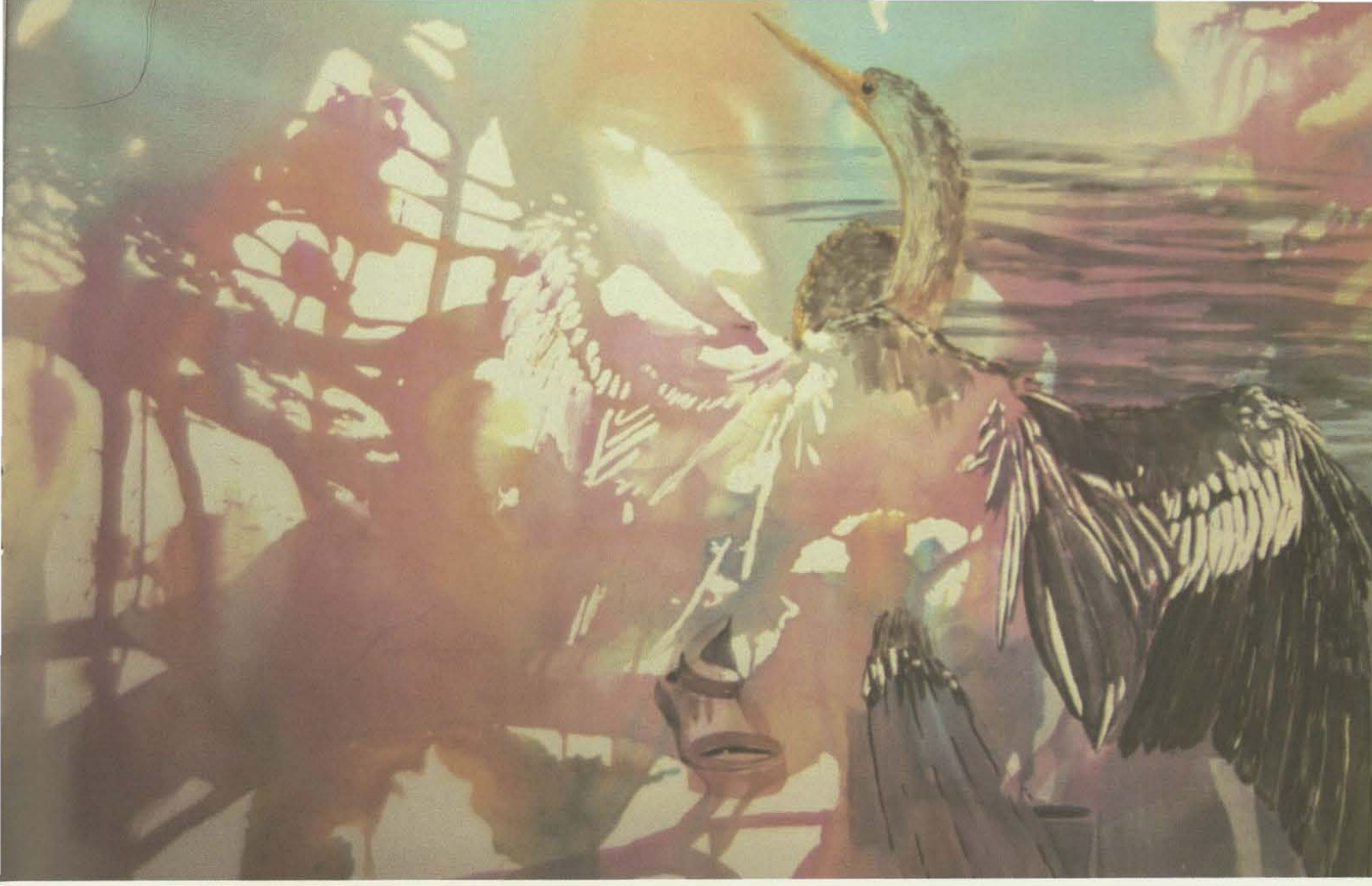
Photographs by
Joe Mac Hudspeth

Their name suggests their habitat: wood ducks use wooded wetlands. You'll find most "woodies" cryptically concealed in wooded swamps, cypress-rimmed ponds and lakes. Unlike most other ducks, wood ducks nest in tree cavities and nest boxes.

Adult wood ducks commonly feed on acorns and other seeds. Egg-laying females switch to a high-protein diet of invertebrates. Ducklings also rely on animal foods for protein and consume more plant material as they grow older.

— Diane Eggeman

▷



watercolorist

Mary Jo Weale

A haze of light filtering through the trees — the swaying stretch of an anhinga's neck — the abstraction of a floodplain forest reflected in pools of color — these dream-like images of Florida come to life in Mary Jo Weale's watercolor paintings.

Weale's impressions of Florida's diverse flora and fauna are depicted in subtle, translucent washes of color. Shades of blue, gold and rose fade in and out of her paintings like the rich hues of an ever-changing sunset. This illumination playing on subjects gives her paintings a distinctive, dimensional quality that has become her trademark.

Sometimes her paintings merely suggest an image, as with the anhinga drying its wings, seen on this page. Other paintings may recall a scene more realistically.

Weale loves to paint Florida scenes and finds Wakulla Springs State Park an endless source of inspiration. Wakulla is one of the world's largest and deepest freshwater springs and gives rise to the Wakulla River. The river is home to an abundance of native wildlife, including nine species of herons and egrets, anhingas, swallow-tailed kites, ospreys, eagles, limpkins and purple gallinules.

"Wakulla is wonderful. I like to come here to be surrounded by the images that I'll be painting, and I especially like to depict our delicate wetlands," said Weale. She is an ardent supporter of the preservation of Florida's wetlands and is a member of several conservation organizations.

Weale often enjoys Wakulla's riverboats where she's likely to sketch 30-40 birds in a 30-minute ride. Sometimes these diminutive sketches are merely a line or two to delineate the curve of an egret's neck or the way the leaves bend and fold in the wind.

She enlarges these simple drawings on a copier, greatly increasing the image size. When she's selected the elements to use in a painting, she draws the over-sized images onto watercolor paper. She then selectively wets areas of the heavy-weight paper and pours diluted dyes down or across it, manipulating the colors with more dye or water. This deliberate ▷

application of color gives a subtle, mottled quality, which she incorporates into the overall design of the painting. She may depict the movement of long, slender grasses by an interwoven pattern of poured colors that meld and bleed together. A background of surrealistic sunsets may create the mood of a painting.

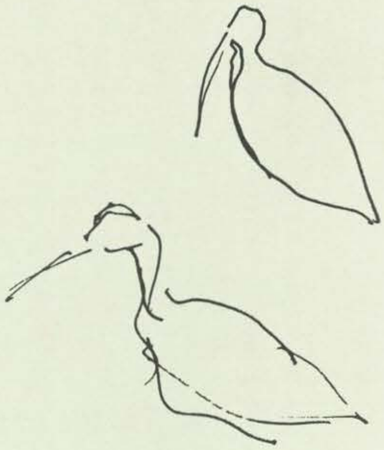
"I've always had a paintbrush or paper and pencil in hand. I grew up around artists and just assumed that everyone likes to draw," she said.

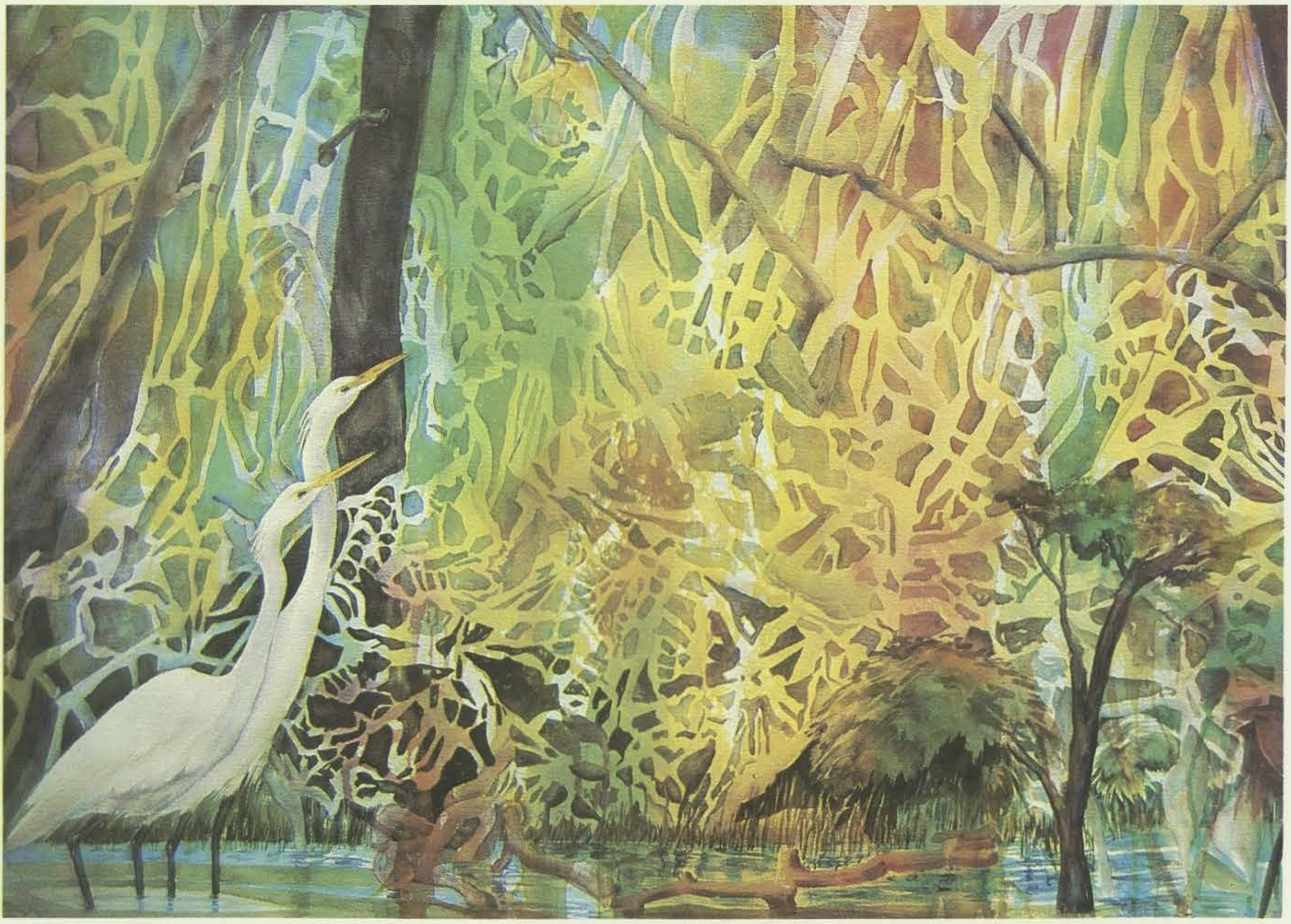
She traded in her pencil for a Prisma pen and took her art more seriously. Soon she found her work hanging in the homes of art collectors and galleries throughout the country.

Weale has more time to draw and paint now that she's retired from her position as chairman of Florida State University's Interior Design Department. She stays busy, dedicating her time to her work and to painting workshops across the country. Years of teaching have not diminished her enthusiasm for sharing ideas and techniques, and she likes to brag on her students and their accomplishments. She recently trained some of the Walt Disney World artists in various watercolor techniques.

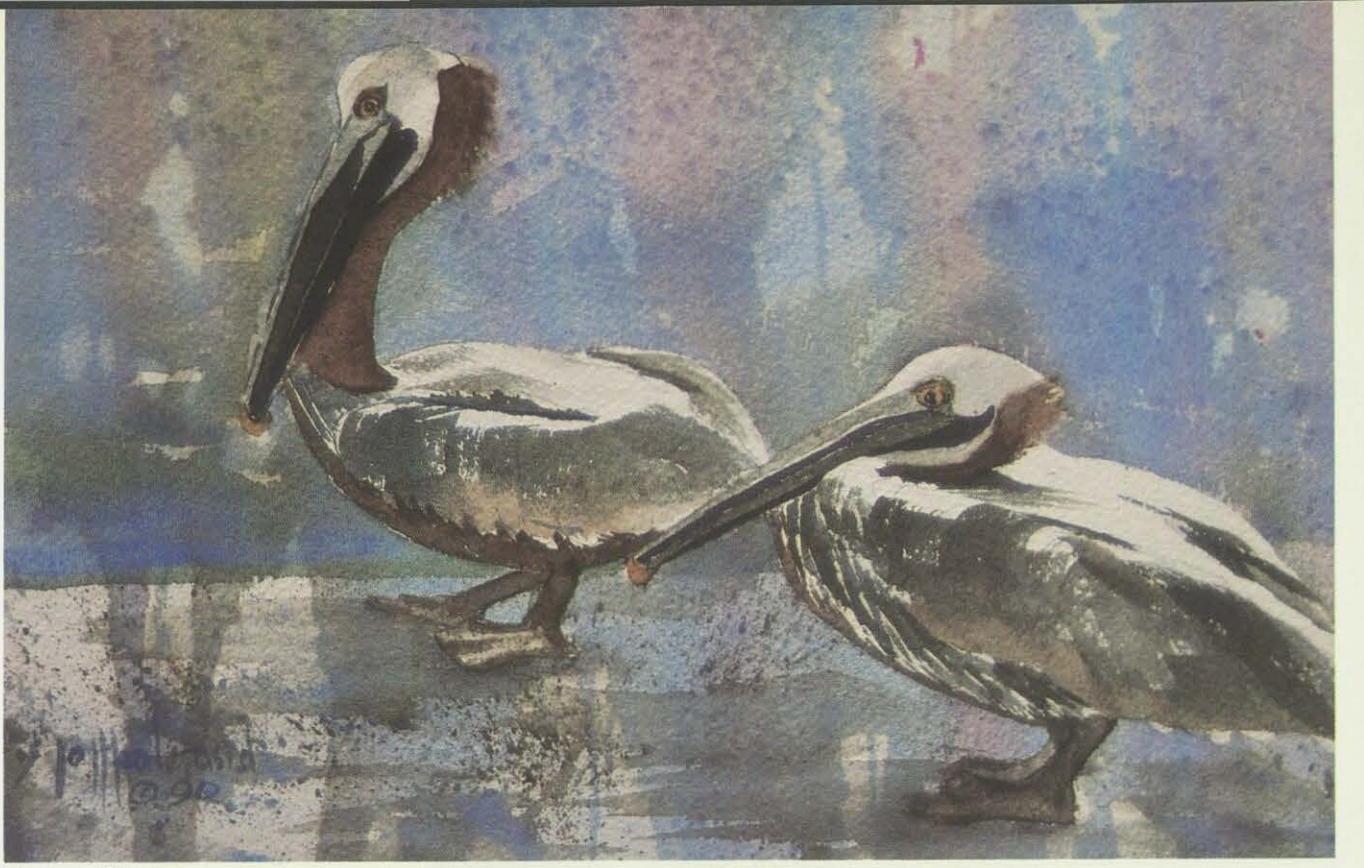
The artist's interpretations of water, sunlight, sky and shadow are her continuing contribution to raising our awareness of Florida's delicate natural resources.

— Andrea H. Blount



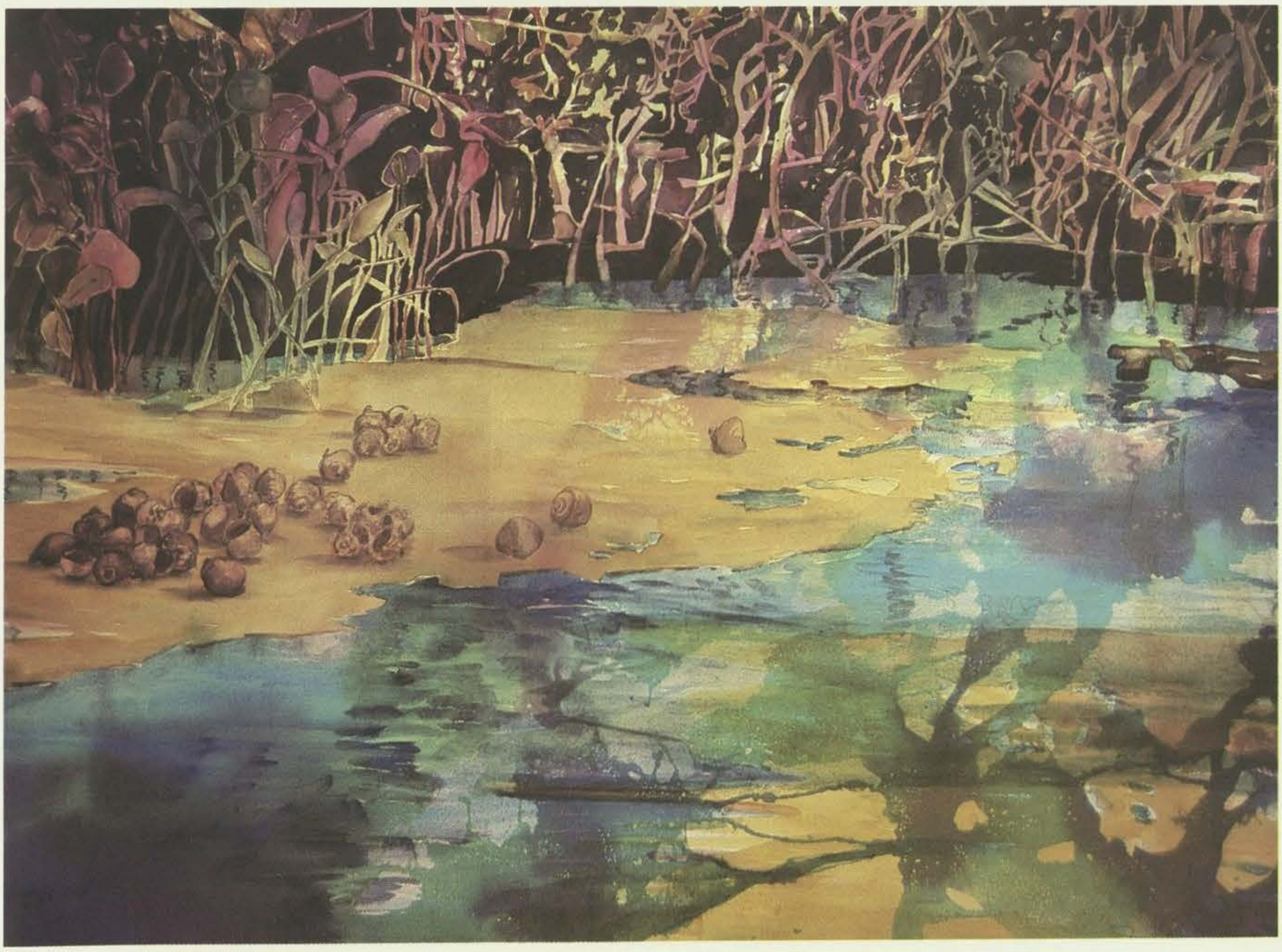


Wakulla Springs, Egrets



Brown Pelicans

Weale's impressions of Florida's diverse flora and fauna are depicted in subtle, translucent washes of color.



Snails

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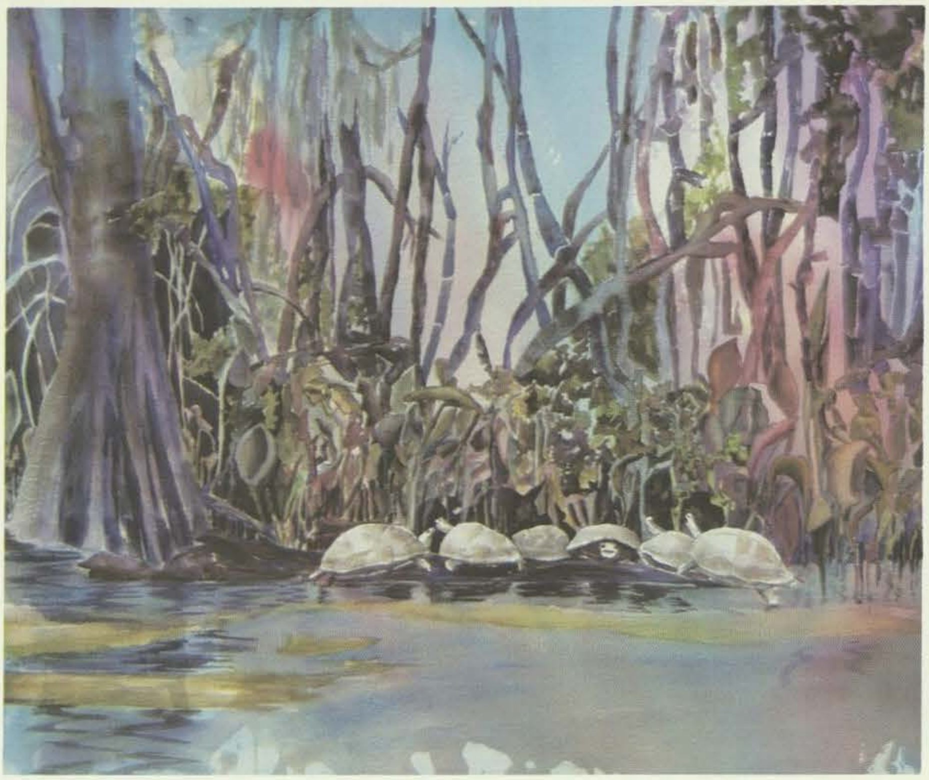
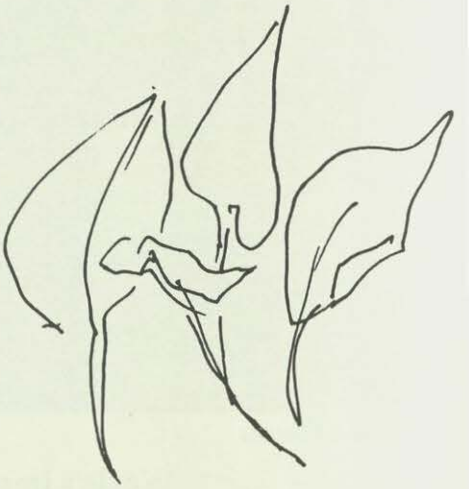
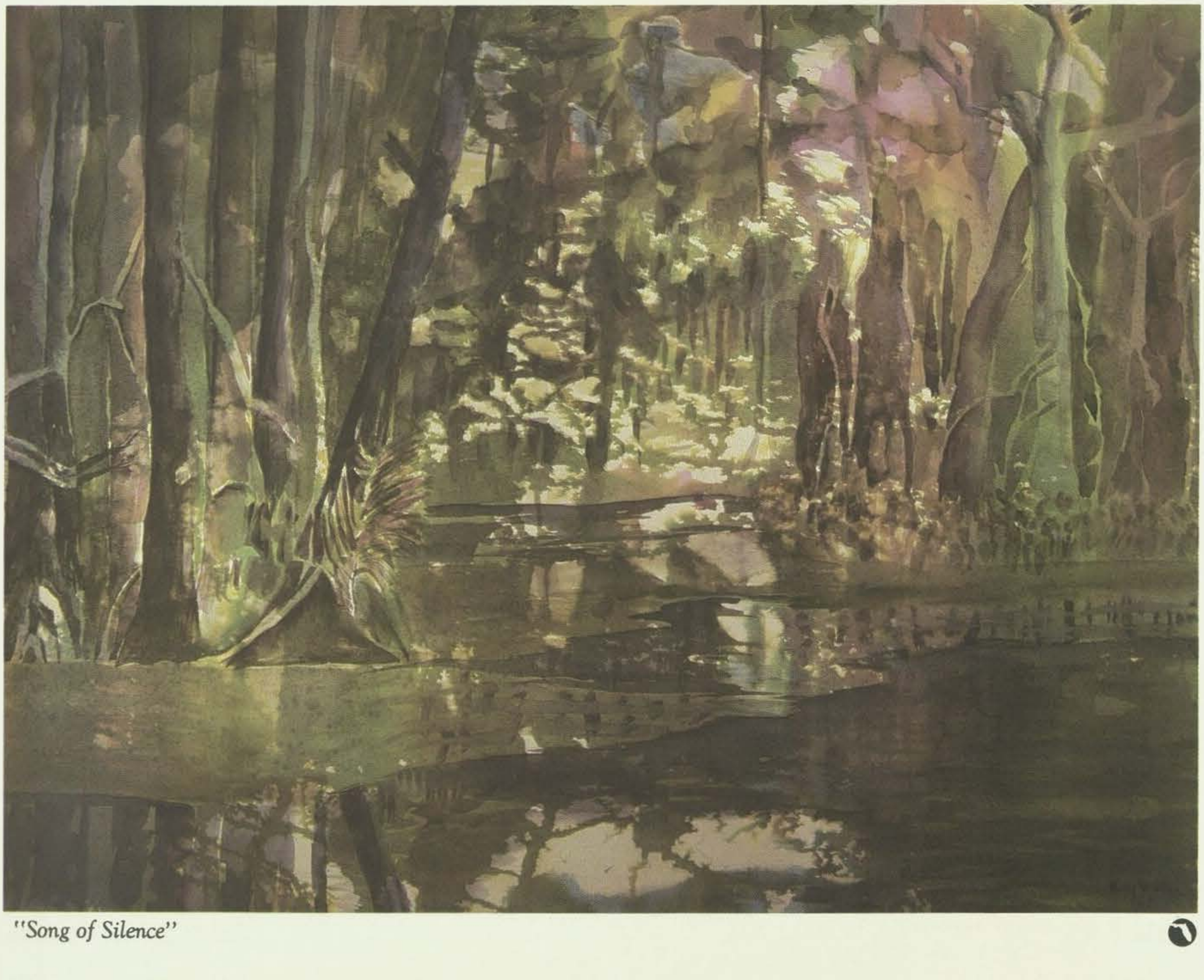


Turtles





"Song of Silence"

Fishing The Forests

Text and Photographs by Richard Farren

Every fisherman I've known has a "spot" or two, a favorite location, a refuge. It may be a secret place, maybe not. But it's definitely a special place, and one that produces some fish, though not necessarily large ones, most of the time. Spots that produce big fish all the time are never secret.

It doesn't even matter if other anglers have been there, as long as they're not there when you are. It's always a little disconcerting when you push through the brush or round a bend in a river and come across someone else in *your* spot — for a second something is wrong with your universe.

Apalachicola National Forest

With new arrivals pouring over Florida's border every day, such fishing spots are getting harder to find. Since moving to Tallahassee, my wife, Claudia, and I have turned to nearby Apalachicola National Forest to fulfill that need. We discovered isolated lakes and short stretches of small rivers — places that obviously were known to others, but most of the time were ours alone.

It took some looking. And we never found some lakes that we'd spotted on maps. We'd wander through the forest with a compass, a map and a fishing rod, continually reminding ourselves that exploring is part of the fun.

Whether your chosen quarry is largemouth bass, speckled perch, redbellied bream or catfish, one of Florida's three national forests probably holds a fishing spot for you. There are lakes, ponds and borrow pits, plus numerous rivers and creeks that flow through pristine woods.

Apalachicola National Forest, with 631,260 acres, is located southwest of Tallahassee. It has dozens of large and small lakes and a number of meandering rivers and creeks. Almost all the lakes have some sort of road leading to them. Many lakes are difficult to reach, however, without the help of a four-wheel drive, while others are accessible with the family car.

The lakes nearest Tallahassee, like Silver Lake and Moore Lake, receive the most pressure because they're just a few miles out of town. But there are plenty of other fishing holes to choose from if you're willing to spend some time looking.

There are also a number of borrow pits that were created when fill was removed for road construction. Truck roads created for removing the fill are still passable by car, especially during dry times. Most of the pits are less than an acre and seldom more than 10 or 12 feet deep. With a map and a little help from Forest Service personnel, you can take advantage of this "small pond" fishing. Forest Service biologists are actively managing many of these pits to increase their fish populations.

In the small lakes within the forest a rowboat or canoe is the answer. The most successful fishermen move along slowly, working the vegetative margins along the shoreline. With small spinners you can catch bass, bream and warmouth.

Trout Pond is a natural lake that has been adapted for handicap access. There's a paved nature trail and a dock for fishing.

The dark, winding, Ochlockonee River borders or passes through the Apalachicola Forest for at least 35 miles. The banks of this narrow river alternate between cypress-lined lowlands and live-oak-studded ridges.

"Pitch fishing" in the spring, summer and fall is the best way to ▷

Whether your quarry is bass, crappie, bream or catfish, one of Florida's three national forests probably holds a fishing spot for you.

take home a bucketful of river bream. A cane pole, bobber, splitshot and a hundred or so crickets are the only ingredients needed. Simply float down the center of the river, flipping a cricket from spot to spot. For bigger catch, such as largemouth bass and chain pickerel, crankbaits are effective, especially when fished around fallen logs and brush piles.

There are dozens of access points along the river, and the Forest Service maintains four recreation sites where you can camp or launch a small boat.

Moving around in the Apalachicola National Forest is relatively easy, especially in a truck or four-wheel-drive vehicle. Many of the roads are passable to cars during dry periods, although some have long stretches of soft sand or bottom-dragging ruts.

Four paved roads cross the forest in a north-south direction, and a number of shorter paved roads connect to these. Numerous sandy roads end at or crisscross the paved routes throughout the forest. The roads are marked with route signs at most intersections throughout the forest.

Forest Road 13, a partially paved road is the only east-west route crossing the entire forest. Running through the heart of the forest, it

connects Crawfordville on the east to Wilma on the west. For about 40 miles it passes pine plantations, swamp forests and stands of mature longleaf pines harboring endangered red-cockaded woodpeckers. You sometimes see deer, turkey and even bobcats, especially at sunset. The eastern part of Forest Road 13, from Crawfordville to S.R. 67, is usually passable by car. The western section is much softer and requires a more rugged vehicle.

Ocala National Forest

The 430,446-acre Ocala National Forest is most famous for largemouth bass fishing. It has 600 lakes and is bordered by the Oklawaha River on the west and the St. Johns River on the east. Some of the more popular lakes are Half Moon, Mill Dam and Grasshopper, all of which have boat ramps. Lakes Eaton and Fore have fishing piers for public access. In addition, a handicap facility has been constructed recently on Grasshopper Lake.

Jim Childress is a fishing guide in Astor who takes clients all over the forest. His most productive spots include Sellers Lake and lakes Bryant and Dorr. Childress prefers the larger, darker-colored lakes in the fall. In March, April and May Jim turns to the smaller, clearer lakes, largely because the spring winds make it hard to get around on the big lakes.

There are 20 boat ramps in the forest, and about half the lakes are reported by the Forest Service to be accessible by two-wheel-drive vehicles.

The Forest Service currently is putting together a brochure on fishing opportunities in Ocala National Forest. Available by the summer of 1991, it will describe about 60 lakes and include information on roads leading to the lakes and what you'll find when you get there.

Osceola National Forest

Osceola National Forest, with over 183,811 acres, has fewer fishing opportunities than the other forests, ▷

but it does have one large lake and a few smaller ones. The 1,700-acre Ocean Pond is round enough to be a candidate for a meteorite collision site. Besides three boat ramps, there are picnic, swimming and camping areas around the big lake.

Another promising spot would be one of the many borrow pits created when fill was removed for the construction of Interstate 10. Some of the pits are managed by the Forest Service, and some are stocked in cooperation with the Florida Game and Fresh Water Fish Commission.

Another obvious advantage to fishing in the forests is the scenery. Every trip is an opportunity for wildlife- and wildflower-viewing. Hardwoods, which grow in the wetter areas, aren't harvested, so many of the lakes are surrounded by Spanish-moss-draped cypress trees.

All state freshwater fishing regulations apply within the national forests and are enforced by the Commission. Maps to the three forests are available from the various Forest Service district headquarters for $2 each. Each map contains a key for ordering geological survey topographic maps for areas you may want to investigate more closely. Forest Service personnel can direct you to the better lakes or borrow pits or to the easiest ones to access.

The Apalachicola National Forest is divided into two districts: the Wakulla District, U.S. 319, Route 6, Box 7860, Crawfordville, FL 32327, (904) 926-3561; and the Apalachicola District, S.R. 20, P.O. Box 579, Bristol, FL 32321, (904) 643-2283.

The Ocala National Forest also is divided into two districts: the Lake George District, S.R. 40 East, Route 2, Box 701, Silver Springs, FL 32688, (904) 625-2520; and the Seminole District, S.R. 19 North, 1551 Umatilla Road, Eustis, Fl 32726, (904) 357-6172. The Ocala National Forest also has a visitors center at 10863 S.R. 40, East Silver Springs, FL 32688, (904) 625-7470.

The Osceola National Forest is wholly within one district, with headquarters at U.S. 90, P.O. Box 70, Olustee, FL 32072, (904) 752-0331.

Richard Farren is the vice president of the Florida Wildlife Federation, a nonprofit conservation organization. He frequently writes outdoor articles for local and regional publications and is the editor of "Florida Fish and Wildlife News," the Federation's monthly publication.

Delicate Balance

Species: Limpkin (*Aramus guarauna*)
Florida Status: Species of Special Concern

When it comes to picky eaters, few birds are as finicky as limpkins. If birds are what they eat, then limpkins are really apple snails (*Pomacea paludosa*) since apple snails constitute about 80 percent of the diet of some limpkin populations.

Limpkins also eat other snails, freshwater mussels and an occasional frog or worm, but the tight association between limpkins and snails carries over to many aspects of the bird's biology. Take, for example, the small gap in the bill that occurs just before the tip. This gap probably helps the bird seize and hold a round, slippery snail. If you view the bill straight on, it appears slightly asymmetrical, with the tip bending a bit to the right. This shape may aid the bird in extracting snail meat. Limpkins can "husk" a snail in very short order, usually in less than a minute.

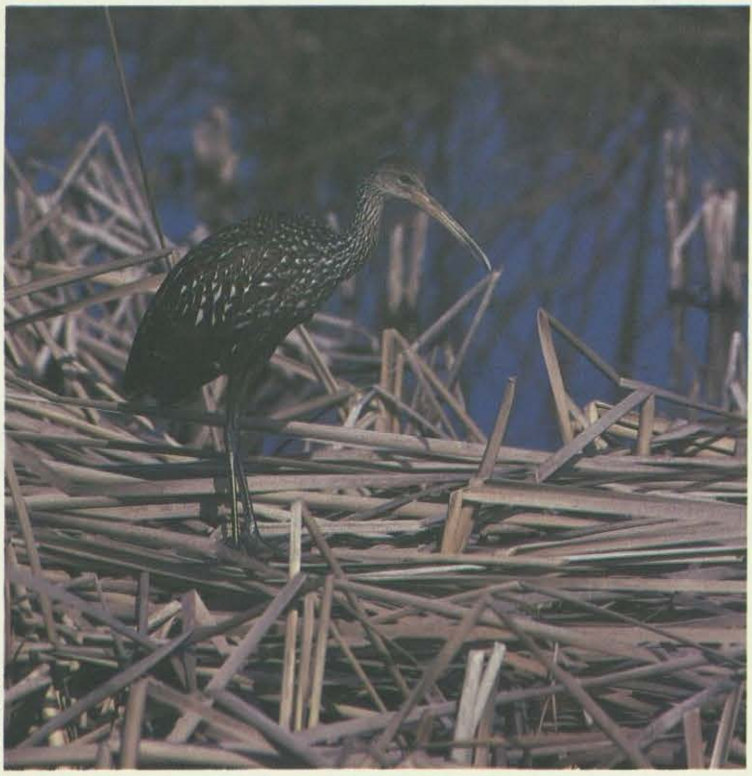
The limpkin also has long legs, neck and bill to search for snails and mussels amid the vegetation of shallow marshes. Its brown and olive body often blends in well with surrounding vegetation, though fawn-like flecks of white dot the back and wings. Pronounced flecking extends along both neck and head.

Limpkins also are quite selective in choosing living places. They thrive along slow-moving streams, tree-cordoned lakes, and freshwater marshes across Florida (except in the panhandle). Such selectivity in diet and living space has rendered limpkins rare throughout Florida and justifies their listing as a species of special concern. Further justification is found by considering the distribution of the limpkin in the United States. Florida contains over 95 percent of the birds found in the U.S. (additional disjunct populations occur in Central America). Thus, efforts to conserve limpkins in the U.S. hinge critically on what is, and is not, done in Florida.

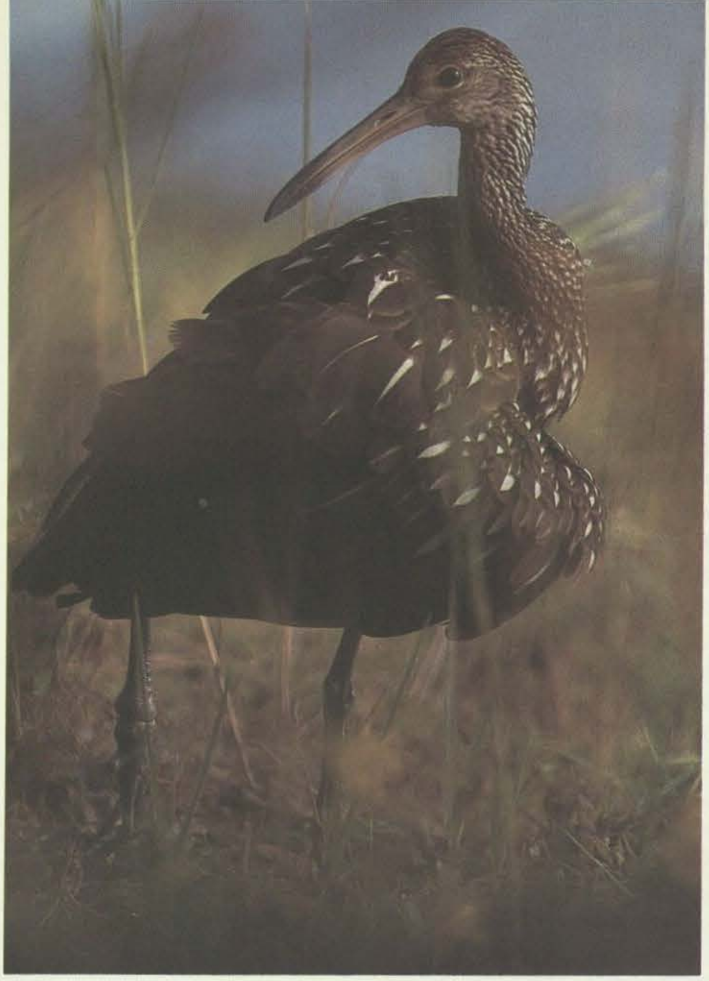
There are many threats to limpkins in Florida. Polluted water running off of developed areas and agricultural lands can affect the abundance of snails downstream where otherwise suitable limpkin habitat occurs. When snail and mussel populations plummet, limpkin populations suffer as well. Transforming natural river swamps and marshes to marinas, motels, homes and restaurants also poses a significant threat. Animals displaced by development don't simply move to some nearby refuge; most of them die.

The continued decline of limpkins will lead to a pronounced aesthetic impoverishment in many areas. The limpkin gives one of the most spectacular versions of the "call of the wild" found anywhere in nature. The enchanting "kur-rr-ee-ow" can be heard a half mile away, and mated pairs often duet loudly for extended periods. The call was made legendary in old Tarzan movies, and it continues to echo in the mind long after it has faded among the trees. Let's hope that the call does not fade into Florida history as well.

— Jim Cox
Office of Environmental Services



TOM EVANS



A Personal Observation

About Fishing Line and Limpkins

Text and Photograph by James Phillips

Maybe it's their weird, croaking cries. Or their benign, unassuming, solitary nature. Or their ability, like all long-legged and seemingly ungainly wading birds, to be suddenly, unexpectedly graceful.

Or maybe it's because I like any critter to which the word *ubiquitous* might apply.

Whatever the reason, I'm particularly fond of limpkins.

One day I spotted a limpkin hiding under a palmetto at Silver Lake Recreational Park, located one hour north of Tampa on I-75.

The palmetto clump was near a busy public boat ramp, and although the larger birds were usually gone from this area by mid morning, this one seemed reluctant to leave, or even to move at all.

Something was wrong.

Curious, I set up a Canon T90 with a 300mm f2.8 and mounted the lens on a tripod. I approached slowly, moving the tripod a foot or so at a time, always pretending to be interested in whatever was on the ground, and looking at the bird only through the camera lens. It let me approach to about 25 feet or so, just close enough for a few shots, then scurried away to another patch of undergrowth. It favored one leg and as it paused in an opening, I could see that the leg was terribly swollen, like a twig with a gall. I could also see a few vestiges of monofilament fishing line that was deeply embedded in the fold of infected skin.

I could not catch the bird. It was too wary and still able to outrun, outmaneuver me. I resolved to return the next morning, but could not. By the time I returned, the limpkin was gone. I've never seen it again.

I did see lots of discarded fishing line, lying about the shore in tangled clumps. I now reserve a hip pocket for the stuff, and although it's highly compressible, I often come home with a pocketful. Soon maybe I'll have enough to knit a canoe, or at least a small monument to all the thoughtless clods who keep fouling up our Edens with such insidious and indestructible residue.

James Phillips owns Silverlake Photographic Services in Tampa.

Fishing Line Lasts Forever

Remember, plastic pollutes the environment and endangers wildlife. Pick up plastic debris, such as beverage carriers and fishing line, when you see it.

If you come across a situation involving injured or imperiled wildlife, contact the nearest regional office of the Game and Fresh Water Fish Commission. If an officer is within responding distance, he or she will be sent to the scene. If not, ask the dispatcher for the number of the nearest wildlife rehabilitation facility.

WILLIAM A. GREER

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CHARLIE HEIDECKER

Multiply Your Turkeys

By Carolee Boyles-Sprenkel

If you hunt turkeys on public land, you can change where you hunt, but you can't alter the conditions under which the birds are living. But if you hunt on private land, your own, by permission or on a lease, you have the unique opportunity to directly affect the turkey population in the area. By your actions, you can bring about an increase in the number of birds available for you to hunt.

Manipulating the population of any wildlife species is a complex process; game managers spend years in school learning the profession. But you can take a page from the game manager's book, employ a few relatively simple techniques that will improve the habitat of the area, and enhance the birds' ability to reproduce and grow.

The key to improving the overall health of any wildlife population is to upgrade the condition of the environment. The methods you can use to do this vary. For instance, seasonal controlled fires are widely used to reduce the brush under pines and to enhance the growth of herbaceous plants.

Dr. Daniel Speake, assistant leader of the Alabama Cooperative Fish and Wildlife Research Unit at Auburn University, says good game management is not as simple as planting a couple of food plots. It's a process that must continue throughout the year, and from year to year in order to be successful. Regardless of your particular situation, the following guidelines should give you some ideas to consider.

Speake recommends that you begin your management plan by evaluating the habitat in the area. If you are managing land that's totally wooded, you need to establish some openings or clearings. The time to do so is in the late fall and early winter.

According to Speake, turkeys can tolerate up to half of an area in openings, especially if they are long and winding with a lot of edge. He recommends having a minimum of 10 percent of any given area in clearings.

He points out that you don't need all of these conditions on your own land. If, for instance, you have only a few acres and you're located between a pasture and an annually burned pine woods, do something different from either of your neighbors. Try burning every other year to provide nesting cover. Then cut a small opening halfway between the pasture and the yearly burned woods, and keep it planted in corn or chufa.

Speake recommends that you complete your burning before nesting begins. "You don't want to do any burning after March 15, because the hens start laying then."

While controlled burns under pines produce good herbaceous growth, be careful how you use fire. The National Wild Turkey Federation is presently supporting a study at Pebble Hill Plantation, on the Florida-Georgia border. "We're finding that all the turkey nests are in one-year rough," Speake said. "So, I would say don't burn all your pinelands annually. Leave some areas every other year to produce ideal nesting cover. But I would burn a good bit of the pine woods on an annual basis to produce legumes and fresh forage."

As spring rolls around, it's time to plant the clearings you've created or are maintaining. Before planting any crop for wildlife, experts recommend getting a soil test. Then ask the county Extension agent to make fertilizer recommendations on the basis of that test.

One species Speake recommends for planting is chufa, a sedge that grows from a nut-like root. "We recommend planting chufa patches in early July. The minimum acreage depends on the raccoon population; if you don't have too many 'coons, you can grow patches as small as half an acre. If you have a lot of 'coons, you need bigger patches, even up to three acres or larger. And you need to broadcast the chufa — don't plant it in rows. Raccoons will go down the row and dig it all up."

Many summer crops can be useful to turkeys, including corn, Bahia grass, and brown-top millet. "They'll use almost anything that produces seed heads for the poults and hens to strip off in late summer," Speake said.

You probably don't need to provide supplemental water, even during dry spells. "Research has shown that turkeys get enough water from dew and succulent foods," Speake said. "Most of the time there's enough surface water around. It's not anything to be seriously considered."

By the time the poults are 2 weeks old, the condition of the brood range becomes important. The openings and clearings you've created will help ensure the quality of the brood range by providing insects and seed sources for the poults. Ideally, you'll have knee-high herbaceous cover that the hen can see over while the poults stay hidden.

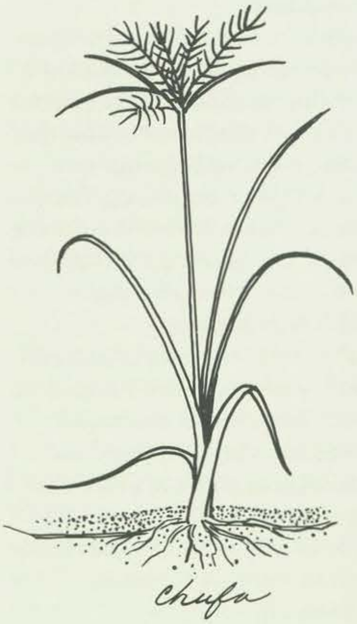
As the weather cools in the fall, it's time to plant the openings with winter feed. You can plant a mixture of clover and wheat, rye grass or oats from early October into December, depending on what part of the state you're in. "These crops provide green forage during the winter and on into the spring," Speake said.

Besides these seasonal jobs, experts offer other general suggestions, such as controlling predators. Illegal hunting also can be a real problem anywhere turkeys are found. Another thing you can do is lock your gates to keep trespassers out and to provide added protection for the flock.

While not all of these management strategies will work in any one situation, they provide some guidelines for improving private-land turkey hunting anywhere in the state. Select one or several you can use in your hunting situation, and watch as your local turkey population — and your hunting success — improves.

Carolee Boyles-Sprenkel is a free-lance writer specializing in hunting, fishing and outdoor recreational activities. Her articles have appeared in state, regional and national publications.

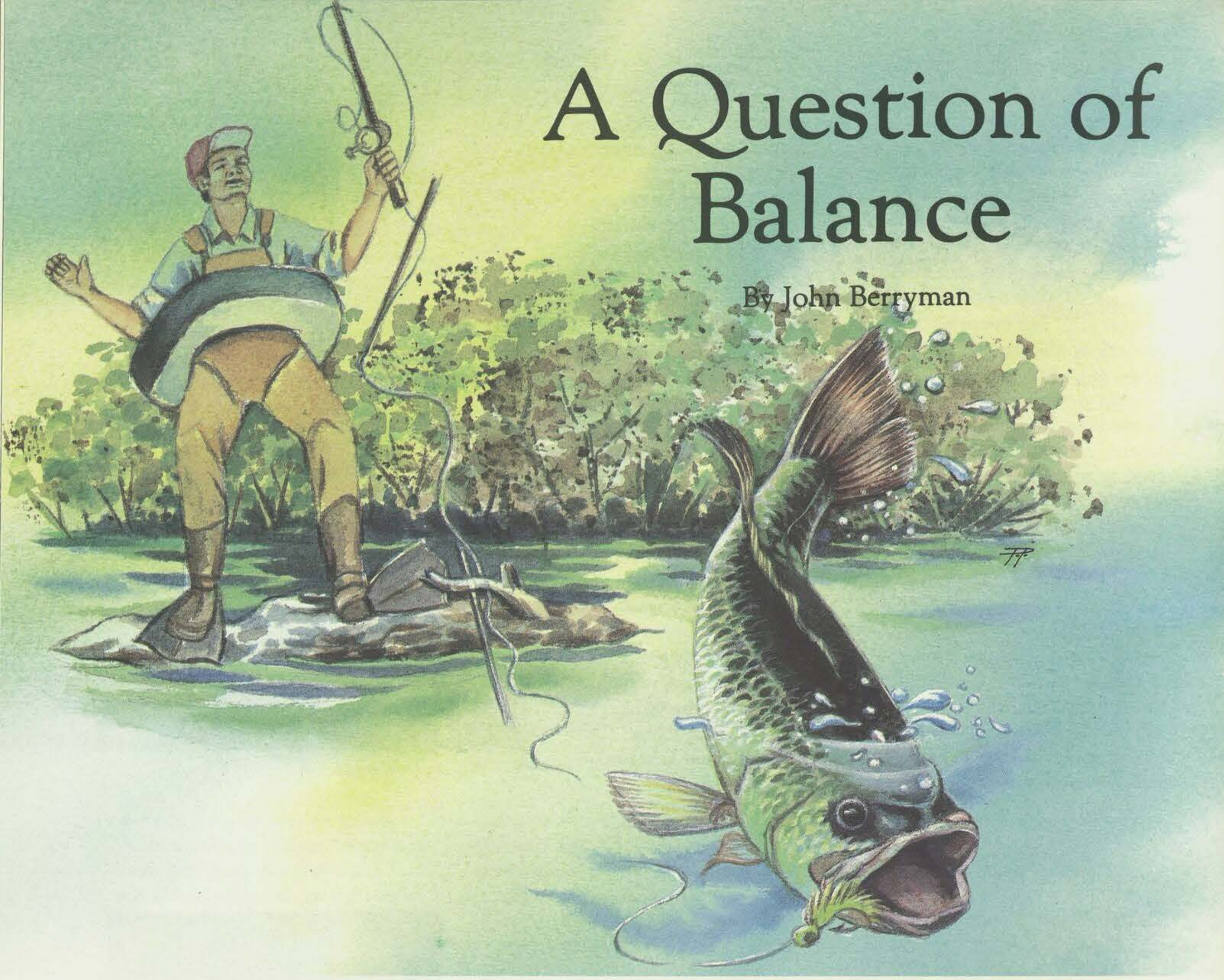
Rye



Oats

Wheat

PHOTOGRAPHS BY CAROLEE BOYLES-SPRENKEL



A Question of Balance

By John Berryman

"Wow," breathed Bob. "Look at that!"

We were fishing one of the many ponds in Lake County, sharing our puddle most of the day with a fellow who was flyfishing for bass from a bellyboat. We watched the bellyboater try to snake a cast under the overhanging branches of a tree that protected a luscious-looking pool. I suppose that after a half-dozen attempts, the fellow simply ran out of patience.

As we looked on, he managed a graceless clamber from the water to the top of a semi-submerged log. He was burdened by his bellyboat, and because his kick fins weren't made for aquatic mountaineering, he teetered back and forth on the log as he began to cast. Still, the guy managed one of those once-in-a-lifetime sidearm casts that you usually see only on TV. The cast skated neatly under the tree's branches and deposited a big, chartreuse bug in a shadowed area.

The pool exploded as a fine bass broke the water, dancing on its tail and rattling its gills. The bellyboater coolly played the bass, working the fish away from visible snags and toward his perch on the log. Soon, the bass rolled at the base of the log. Carefully, the fisherman leaned over to lip the fish. Naturally, that's when his feet slipped.

In the rather thrilling 10 seconds that followed, he gashed his tube on a broken branch that protruded from the log, cleverly turned his fine, two-piece graphite flyrod into a crummy, three-piece rod, and lost the trophy bass! The bass was kind enough to wave its tail before swimming off.

Bob and I could only shake our heads. That fisherman, although possessing an awesome inventory of technical skills, had forgotten the most important fishing rule: the basic principle of *balance*.

The Balance Principle is simple: *FISHING TENDS TOWARD MEDIOCRITY*. In other words, every terrific cast a fisherman makes, every faultless reading of fish habitat, every perfect selection of lure or fly is *balanced* by a rod-tip being shut in a car door, an expensive crankbait snagging firmly in a dead tree, or the discovery that the baitcasting reel somehow never made it back into the tackle box after you lubed it.

Even fishermen with years of experience can be hammered by the Balance Principle. Bob told me about the time his father, known to his friends as "Shorty," found himself in the midst of a school of voraciously feeding sunshine bass.

Working with machine-like precision, Shorty grabbed a slick, frantically wriggling minnow, baited his hook in a split second, and dropped his line over the side to snare a bass. Shorty repeated that performance seven times and caught seven nice fish in nine minutes. Then the Balance Principle struck.

Fish number eight swam up instead of down, just as Shorty was putting some beef into the rod. Line, fish and hook all came out of the water and into the boat. More precisely, fish and hook (especially the hook) wound up in the tip of Shorty's collar, and Shorty and the fish shared a special, emotional moment as they gazed deeply into each other's eyes.

In that moment of silence, before Shorty even had a chance to introduce himself to the fish, he heard a child's reedy voice drift across the water from a neighboring boat. "Daddy," the voice asked, "why is that man kissing that fish?"

"Hush," said an older, more disgusted voice, "just ignore him, son, and maybe he'll go away."

"Gaaaah!" said Shorty calmly, as he tore the collar off of a $60 shirt and threw fish and collar over the side, forgetting, in the heat of the moment, that where fish went, thence went hook, and that where hook went, line, rod and reel were sure to follow.

"My, how terribly unfortunate," Shorty chuckled as he watched a new graphite rod and ball-bearing baitcaster fade into the cool, deep (*really* deep) waters of the lake.

Shorty has since recovered his composure. He said that now that he's done it for a while, bowling is a lot more fun than he thought.

But, an intelligent fisherman can make the Balance Principle work for him. Bob and I were trolling for hybrid bass at a local lake recently. Fishing wasn't just slow — it was nonexistent. Bob, who was fishing from the bow of the boat, took matters into his own hands. He placed his rod on the deck, cleverly tangled his jacket in the reel, then tied up the whole works in the anchor rope. As I watched in frank admiration, he resolutely turned his back on the rod and walked back to the stern of the boat to get a drink. He got the soda, drank it slowly, and then spent a moment gazing intently into the fish finder, never once looking at his rod, as he attempted to *feel* the balance of forces. Then, when something told him that the time was right, he dashed forward just in time to meet the inevitable strike from a 7-pound fish. The tailor said that Bob's jacket can be mended, and Bob's already washed most of the soda pop out of the reels that were in the bottom of his tackle box. I miss that darn anchor, though.

I favor a quicker, more direct approach. When simultaneously confronted by a structure that I can't figure out and a fish finder that seems to be lying through its electronic teeth, I simply stick a Texas-rigged chartreuse worm deep into my earlobe, or perhaps into the tip of my nose.

In about the time it takes for the tears to well up in my eyes, the nature of the structure will become clear to me. Also, my fish finder suddenly will display those beautiful crescent moon shapes that mean fish, and I will realize that if I can weasel the boat right over *there*, there's just enough room for a reasonable cast. I should warn you that this technique, though it has never failed me, only works when you use hooks with deep, *sharp* barbs.

As I travel around local ponds and lakes, I notice other canny fishermen who have crankbaits, plastic worms and the like dangling from various body parts testifying to the effectiveness of this simple procedure. Friends from out of state tell me that this technique seems to be used heavily in other parts of the country, as well.

More experienced fishermen develop an intuitive ability to manipulate the Balance Principle. When I was young, I used to fish with a fine gentleman named Al Haney. Al possessed the mysterious ability to keep a running tally of the good and bad forces that apply to fishing. I remember many times when Al would follow up a phenomenal cast by casually flipping his glasses into the water or would quietly swallow his snuff in the midst of fighting a large fish on light tackle.

By carefully balancing positive and negative forces, Al was one of the most productive fishermen I have ever known. Though I suspect he couldn't describe the forces he was manipulating, Al could routinely bend them at will.

I remember a time when we were night fishing for catfish in Al's old wooden boat. "You know," Al said slowly, his voice coming out of the darkness, "that cheese-bait I bought is all gone. I've still got the cheese spread I brought for my crackers, and I've been munching on cheese and Triscuits all night. What do you suppose that means?"

A lesser man might have panicked, but Al just scratched his head for a moment, and chose not to think too carefully about his discovery. He caught a bumper crop of catfish that evening. He never bought that brand of cheese spread again, though. He said it was a bit strong for his taste.

Now, I know there are some fishermen out there who will be reluctant to put these theories into practice. Therefore, I invite any skeptics to try the following test. The next time you see a crowd of fishermen at a cleaning station or in the establishment of a purveyor of cooling beverages, stop and scrutinize them. Find the guy with the worst sunburn and the dirtiest clothes. Look for a grimly smiling man with a crankbait stuck in the back of his neck, who's trying to find a way to tape a tip back onto a very expensive rod. Then look around for the fellow who looks like a model from a mail-order catalogue. Ask each of them how he did that day. I am confident that after you've conducted a little angler-research, you too will be convinced of the existence of the Balance Principle. And if your friends scoff or make fun, just tell them that it takes a *real* man to wear a chartreuse worm earring.

John Berryman balances his freelance writing activities with his work as associate director of BioServe Space Technologies in Boulder, Colo.

Florida Buck Registry Update

By Thomas J. Wright

The Florida Buck Registry, a record of white-tailed deer taken in Florida, has grown each year since it was established in 1982. Through November 1990, 1,488 Florida deer racks have been scored with 1,361 or 92 percent making the Florida Buck Registry. Reservists have scored 542 in the Northwest Region, 456 in the Central Region, 271 in the Northeast Region, 173 in the South Region and 46 in the Everglades Region.

This is a Commission program, neither recognized nor certified by the Boone and Crockett Club, but solely coordinated through the Wildlife Reserve Coordinator in each regional office. Scoring is based on the Boone and Crockett system because it is familiar to most hunters. The Commission currently has 12 employees around the state who are certified by the Boone and Crockett organization.

The registry provides information on what areas and habitats produce bucks with trophy antlers and at the same time recognizes the sportsmen. Another goal of the registry is to make more people aware of the kind of deer management it takes to produce trophy bucks such as sound habitat management and a controlled and limited harvest of does and small bucks.

In order to qualify for the Florida Buck Registry, contact the Wildlife Reserve Coordinator in the region nearest you and meet the following criteria: (1) minimum antler score must equal or exceed 100 B & C inches for typical antlers and 125 B & C inches for non-typical antlers; (2) all deer must be taken in Florida; (3) all deer must have been taken legally; (4) deer taken in previous seasons are eligible for entry.

The following is a list of the top 10 statewide typical and non-typical trophies as well as the 10 top typical trophies by region from the registry.

NORTHWEST REGION - TOP 10 TYPICAL BUCKS

Hunter	Location Taken	Year Taken	Antler Score
Larry Furr	Gadsden County	1977	168 1/8
Danny Raines	Jackson County	1973	154 3/8
H.M. Butler	Gadsden County	1979	153 7/8
Nancy Sumner	Liberty County	1981	152 3/8
Robert Jones	Calhoun County	1985	150 4/8
Jay Taylor	Jefferson County	1987	150 2/8
Richard Hayes	Gadsden County	1989	148 5/8
Eric Richardson	Liberty County	1988	148
William C. Coxetter	Jefferson County	1984	147 7/8
D.E. Weaver	Okaloosa County	1971	147 1/8
Shorty Roberts	Gadsden County	1967	147 1/8

NORTHEAST REGION - TOP 10 TYPICAL BUCKS

Hunter	Location Taken	Year Taken	Antler Score
Chris Harrell	Madison County	1987	156 7/8
Gary W. Leis	Taylor County	1987	156 5/8
Robert S. Ballard	Columbia County	1980	153 1/8
Clifton Davis	Alachua County	1986	152 7/8
Clifford Burnham	Lochloosa WMA	1978	150 2/8
C. Frank Jones	Levy County	1957	149 2/8
Artie Hall	Alachua County	1984	148 5/8
Richard K. Lee	Hamilton County	1977	146 6/8
Jerry L. Page	Madison County	1989	142 7/8
J.T. Reynolds	Taylor County	1983	140 4/8

SOUTH REGION - TOP 10 TYPICAL BUCKS

Hunter	Location Taken	Year Taken	Antler Score
Bill Scharber	Pasco County	UNK	153 5/8
Mike Sherouse	Hernando County	1970	150 7/8
Pete Wyrosdick	Green Swamp WMA	1989	150 7/8
Charles P. Lykes, Jr.	Highlands County	1977	150 6/8
Stanley Gude	Pasco County	UNK	140 2/8
Lee Sisson	Hardee County	1988	139 1/8

Mark Croft Sr.	Pasco County	1980	139
Henry Boyett	Pasco County	1955	137 2/8
E.W. Cribb	Highlands County	1981	135 6/8
Ronnie Elrod	Highlands County	1981	135 3/8

EVERGLADES REGION - TOP 10 TYPICAL BUCKS

Hunter	Location Taken	Year Taken	Antler Score
G.P. Holly	St. Lucie County	1978	145
Jim Wilson	Indian River County	1985	144
Tom McBroom II	Okeechobee County	1966	140 1/8
Greg Cadenhead	Indian River County	1981	134 1/8
Jack Daughtrey	Martin County	1964	132
James N. Orth	Indian River County	1966	131 1/8
Glenn Schenavar	Indian River County	1987	128 5/8
Stewart Stein	Okeechobee County	1990	125 6/8
Jack G. Curry	Martin County	1989	125 6/8
Greg Wurster	Palm Beach County	1981	123

CENTRAL REGION - TOP 10 TYPICAL BUCKS

Hunter	Location Taken	Year Taken	Antler Score
Robbie Hastings	Ocala National Forest	1940	154 3/8
Melvin Arline	Citrus WMA	1980	152 5/8
Herbert G. Weagraff	Orange County	1986	149 4/8
Rick Hannis	Brevard County	1985	146 7/8
Ronald L. Waldron	Orange County	1975	144 5/8
Jim Wilson	Brevard County	1984	143 5/8
Randy Alderman	St. Johns County	1966	142 3/8
Melvin Arline	Citrus County	1983	141 5/8
W. Bryant Adams	Osceola County	1959	140 3/8
Gerald Sherrer	Marion County	1968	140 2/8

TOP 10 FLORIDA BUCK REGISTRY
(Typical)

Typical antlers are symmetrical in form, with matching pairs of tines from the upper surface of both main beams.

Name	Location Taken	Date	Score	No. of Tines
Larry Furr	Gadsden County	1977	168 1/8	14
Chris Harrell	Madison County	1987	156 7/8	12
Gary W. Leis	Taylor County	1987	156 5/8	11
Danny Raines	Jackson County	1973	154 3/8	10
Robbie Hastings	Ocala National Forest	1940	154 3/8	12
H.M. Butler	Gadsden County	1979	153 7/8	12
Bill Scharber	Pasco County	UNK	153 5/8	10
Robert S. Ballard	Columbia County	1980	153 1/8	11
Clifton Davis	Alachua County	1986	152 7/8	11
Melvin Arline	Citrus WMA	1980	152 5/8	15

(Non-Typical)

Non-typical antlers are frequently nonsymmetrical and have unmatching tines growing from the sides or lower surfaces of both main beams. They may also have tines on the upper beam surfaces.

Name	Location Taken	Date	Score	No. of Tines
Clark Durrance	Wakulla County	1940s	201 3/8	25
Henry Brinson	Jackson County	1959	186	29
W.L. Hurst	Calhoun County	1970	181 2/8	22
Clay H. Mickler	Pasco County	1985	170 4/8	20
Donnie Nicholson	Escambia County	1972	164 5/8	14
Billy Joe Bass	Madison County	1975	163 1/8	16
Charles Dean	Taylor County	1936	162 5/8	18
Ronnie Elrod	Highlands County	UNK	160 6/8	22
Alton Bonds	Suwannee County	1986	156 5/8	15
Wesley N. Oehmig	Alachua County	1985	153 5/8	15

It's The Law

By Inspector Kyle W. Hill

Question: Is there a new law that prohibits shooting turkeys that are roosting?
Answer: Yes. Commission Rule 39-12.002 makes it illegal to take any turkey while it is on the roost. This rule is necessary to prevent the taking of hen turkeys that frequently roost around a gobbler. Also, poor light conditions make aiming difficult, so turkeys are easily wounded when shot from the roost.

For law enforcement purposes, a turkey is considered "on the roost" when it is in a tree from one-half hour before sunset until one-half hour after sunrise. The law does not prohibit taking turkeys on trees outside of this time period.

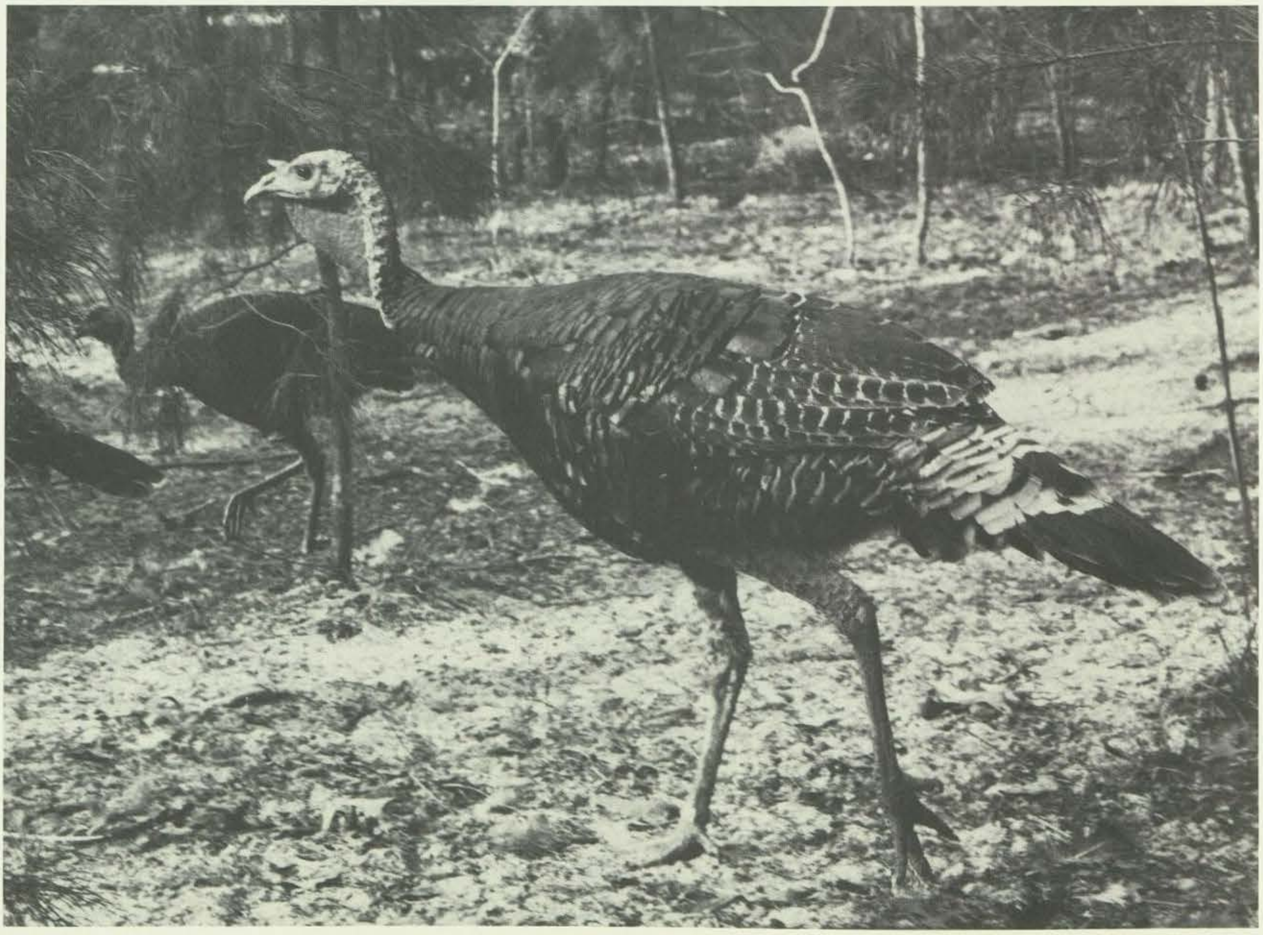
Question: Can you explain the new Hunter Education requirement? I've heard various interpretations of the law.
Answer: Section 372.5717, Florida Statues, states that as of June 1, 1991, anyone born on or after June 1, 1975 must successfully complete a hunter safety course in order to take wild animal life with a firearm in Florida. Such persons will receive a verification card and will not be able to buy a hunting license without it. Persons not required to possess a license must have their hunter safety card with them while hunting.

The Commission's Hunter Education Course qualifies under this law. The free course is offered statewide and lasts approximately 15 hours. Hunter safety cards issued by other states are acceptable if their course has been approved by the Florida Game and Fresh Water Fish Commission.

This law does not apply to any person hunting in his county of residence on his homestead or the homestead of his spouse or minor child, or to any minor child hunting on the homestead of his parent. A homestead is defined as the home and adjoining land occupied by a family.

For information on the next class in your area, call the nearest Commission office. We urge parents to take the course with their children. It's a great way to learn safe hunting together.

GFC



Quail Hunting Safety Tips

For many people, hunting quail with a fine pointing dog is a hunting experience with no equal. However, the sudden burst of unpredictable flight, combined with the fast-snap shooting by the hunter, creates a potentially dangerous situation. Like other types of hunting, quail hunting has its own set of rules designed to ensure safety for all involved — man and dog.

* **Blaze orange** hunting vests and hats are an absolute must. Most quail are shot between five and six feet above the ground, the height of an average man.

* **Gun safeties** must be in the "on" position until the birds flush and the hunter is raising the gun to his shoulder. Hunters should check their safeties frequently to make sure they are in the "on" position.

* **Walk, don't run** when the dog goes on point. A hunter running with a loaded gun endangers himself and those around him.

* **The zone of fire** should be respected. Shooting a bird in another hunter's zone is considered bad manners, a sign of greed, poor sportsmanship and dangerous. It is one of the quickest ways to be asked to leave a hunt. Zone shooting is not complicated. As both hunters stand next to each other facing the same direction, they draw an imaginary line at a right angle separating them. The zone for the hunter on the right would be the area to the right of the line separating them. The zone for the hunter on the left would be everything to the left of the line. For safety's sake there should be only two quail hunters to a hunting party.

* **Hunting vehicles** are the site of many a hunting accident. Never place a loaded gun in your vehicle. Always secure your firearm before unloading or loading the dogs.

* **Dog safety and etiquette** are important to the success of the hunt. The most skilled member of your quail hunting party is the dog. His ability will govern the success of the hunt. To veteran bird hunters, the quality of the dog's work is the most important part of the hunt, more important than the number of birds taken. The dog finds the birds, locks on point and waits for you to shoot, and if you've done your part, it retrieves the birds. If you are hunting for the first time with someone's dog, you should ask its owner if the dog is broken to wing and shot. That means, "Will the dog hold its point when the birds flush until the hunters shoot, then break point to retrieve the bird?" Although most quail dogs are broken to wing and shot, remember that dogs have various levels of proficiency. Even the best dog will sometimes break point on a flush. Keep an eye on the dog at all times. If the dog breaks point for a low-flying bird, don't shoot. Before the hunt, ask the owner what to expect from a dog in the field.

When hunting with a new partner and his dog, remember that his greatest concern will be your regard for their safety. He may even say to you, "Remember, don't shoot the dog." It may sound like he is joking, but he is serious. Your new partner will be watching to see how careful you are about shooting over his dog. If he feels that you are not safe, the hunt probably will end early.

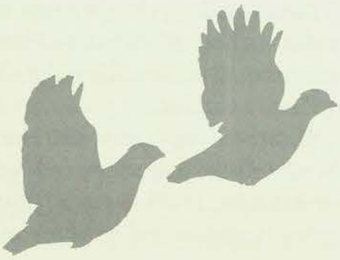
Another thing to be aware of is the danger of muzzle blast. If you are not up with the dog when the birds flush, and you shoot from behind the dog, it may catch some of the muzzle blast that could damage the dog's hearing.

The most frequently broken rule relating to bird dog etiquette is the "**Don't Fuss With Another Man's Dog**" policy. Each dog has been trained to a special vocabulary which includes not only certain words, but also tone and inflection. If you try to give commands to the dog, you will confuse it and possibly anger its owner. Do not expect the dog to retrieve a bird to you; it has been taught to retrieve to its owner. When the hunt is over — and only when it is over — and you want to reward the dog for its part in a good hunt, ask the owner if it is OK to pet the dog. This shows your admiration for his dog, and also your respect for their relationship.

Quail hunting is a tradition that goes back for generations. Follow these guidelines to share the tradition and have years of safe, rich hunting experiences.

This information provided by the **Florida State Committee of Quail Unlimited, Inc.**

If you would like information on the Quail Unlimited chapter nearest you, contact Mr. Chuck Howard, Chairman, Q.U., Inc., Florida, 10869 Gantry Street, Boca Raton, FL 33428.



Conservation Update

Compiled by Scott Ball

Acid Rain a Threat To Florida Fishing, Tourism

Acid rain concentrations in rural north Florida forests have increased by at least 50 percent in the past 5 years, according to a University of Florida (UF) study. This is cause for concern because of its effect on the state's lucrative recreational fishing industry.

"If our lakes continue to acidify, the fish will lose their food sources and major losses to recreational fishing are likely to occur," said Thomas Crisman, a UF environmental engineering professor who participated in the study. Most vulnerable, he said, are the sandhill lakes of northwest Florida, because they lie on sand deposits that are not buffered by limestone.

Tourists and residents spend $1 billion annually on recreational fishing, according to Mark Trainor of the Game and Fresh Water Fish Commission's Office of Informational Services.

Now's A Good Time To Plant Trees

If your yard needs more shade or if you want to enhance your landscape, now is the time to plant trees, according to the Florida Department of Agriculture and Consumer Services' Division of Forestry.

"The actual planting of trees is best done after the first winter freeze when most trees are dormant," said Jim Harrell, urban forestry coordinator with the agency. "To do the job properly, however, thought should be given to the location of the trees, the type of trees to be planted and where the trees will be obtained."

Harrell reminded potential tree-planters to avoid planting large trees too close to your house. He said they could damage siding, clog or break rain gutters or even loosen roofing. Also, trees with aggressive root systems can undermine sidewalks and invade septic tank lines, he added.

Native trees serve many purposes, Harrell said. Dogwoods, silverbells, magnolias, redbuds and wax myrtles, for example, provide shade, ornamentation, colorful spring blossoms and food for wildlife.

Panther Death Sparks Competition For Territory

Panther No. 17, a dominant male, died of natural causes last summer, leaving behind a territory that is now under contention among other nearby panthers.

"When a dominant male dies, other panthers move in to claim his territory," said Tom Logan, head of wildlife research for the Game and Fresh Water Fish Commission. "Panthers with smaller, subordinate territories may move in to establish dominance over all or part of the area, and 'floaters' (usually younger cats with no established territories) may claim whatever territories they are capable of defending."

Researchers have been able to track panther No. 26 as he expands his home range to include part of what No. 17 left behind. Meanwhile, No. 28, a male floater, appears to have moved in to claim the rest of No. 17's territory.

According to panther research biologist David Maehr, No. 28 may have killed two female panthers in his quest to establish dominance. "That's not something we are worried about," Maehr said. "It's the way nature is supposed to work."

The territories left behind by the two females will be filled by other panthers. Researchers hope reproductively active females will move in, which would further benefit the population.

Cover Art Contest Opens

Once again FLORIDA WILDLIFE is calling on wildlife artists to participate in our annual cover art contest. The winning entry will be featured on the cover of our July-August issue and will be printed in a limited edition of 1,000 signed and numbered prints. The artist will receive $500.

The main subject should be a native species. The background should be relatively simple, although landscape scenes or suggestions of habitat natural to the species may also be appropriate. The winning image must follow a horizontal 11¼ x 16½-inch format with the right half designed appropriately.

Send only 35mm slides of original artwork. Preferably, artwork should fill the slide area or have a black background. Deadline for receiving entries is Monday, May 13. Send entries First Class to: Art Editor, FLORIDA WILDLIFE, 620 S. Meridian Street, Tallahassee, FL 32399-1600. If you have questions, please contact the art editor at (904) 488-5563 or the above address for more details. We cannot accept collect calls.

"Florida's Water" Brochure Available

The Florida Conservation Foundation, supported by a grant from the Governor's Environmental Education Grant Program, has produced a new brochure on the state's water resources.

"Florida's Water" includes photographs by James Valentine and text written by a team of experts. Its purpose is to educate residents and visitors about how Florida's water systems work and what people may do to help protect them. Topics include water cycles, recharge areas and aquifers, swamps, rivers and lakes, marshes and coastal areas.

For a copy, send a 10-inch self-addressed envelope with 45 cents postage to: Florida Conservation Foundation, 1251-B Miller Avenue, Winter Park, Florida 32789.

Bad and Good News About Wetlands

The U.S. Fish and Wildlife Service estimates that we have lost 117 million acres of wetlands in the lower 48 states since colonial times.

In a report titled "Wetlands Losses in the United States: 1780s to 1980s," the Service compares current wetland acreage to estimates of that of the 1780s. According to the report, 53 percent of wetlands in the contiguous United States have been destroyed, dropping from 220 million acres in colonial times to 104 million now. That's an average rate of 60 acres lost per hour for 200 years.

Florida, according to the report, ranks 26th among the lower 48 states in percentage of wetlands lost. More than 9,250,000 acres — 46 percent — have been destroyed. California has seen the greatest decrease — 91 percent — while New Hampshire has lost the least — 9 percent.

In a more positive vein, the first projects funded by the 1989 North American Wetlands Conservation Act will acquire, improve and restore nearly 360,000 acres of wetlands. The parcels are scattered throughout the continent and harbor dozens of species of waterfowl, mammals and rare and endangered wildlife.

Project sites are located in Canada, Mexico and nine states. Florida is not among them. Funding comes from $14.4 million in federal money and $27.8 million in partnership contributions from Canada, state governments and state and national conservation groups.

In Memory of Perry Oldenburg

Fish and wildlife lost a strong advocate with the passing of Perry W. Oldenburg on Dec. 2, following a two-year battle with leukemia. Perry was a biologist with the Commission's Office of Environmental Services and worked on habitat-protection issues in the Tallahassee headquarters for the last six years.

Perry's interest in wildlife and conservation stemmed from his upbringing in rural Illinois. While earning a bachelor's degree at Knox College in Galesburg, Ill., he studied in Costa Rica. After graduating, he joined the Peace Corps and served in Zaire and Gambia, teaching self-sufficiency through fish culture. After returning to the U.S., he earned a master's degree at Texas A&M. In 1983, as a fisheries biologist with the U.S. Fish and Wildlife Service, Perry worked on a cooperative finfish and shellfish research project in Everglades National Park. During his tenure with the Service, he continued to serve the Peace Corps by training other volunteers in fish culture.

Perry joined the Commission in 1985. His work was characterized by an unflagging commitment to the protection of fish and wildlife habitat from the impact of development. His broad background and experience allowed him to deal effectively with a host of regulatory agencies whose decisions affect the well-being of fish and wildlife resources. He spent many additional hours furthering his own education, volunteering for conservation organizations and teaching courses in enhancing the wildlife value of urban lands. He was a frequent contributor to FLORIDA WILDLIFE.

Perry Oldenburg will remain an inspiration. His dedication and commitment to humanity as a component of the natural world touched many — from helping a poor farmer in Africa to become self-sufficient, to allowing our children to see woodpeckers in our own back yards. We will miss him dearly.

— Doug Bailey

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Lake City, FL 32055
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1239 Southwest 10th Street
Ocala, FL 32674
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Floridana

The early 1900s saw a dire thing happen to quail country — north Florida, south Georgia — the land of big hunting plantations. The popular little brown and white bird began to disappear. The sporting life was in danger of losing its sport. The solution to this problem marked a milestone in land management and the use of prescribed burning.

To deal with the decline in their game bird, quail preserve owners wrote to the Bureau of Biological Survey, a forerunner of the U.S. Fish and Wildlife Service. They described the progression of the quail's decrease and asked for assistance. From this contact, the Bureau and concerned sportsmen launched the Cooperative Quail Investigation, a probe into the life history and habits of the bobwhite quail on approximately 200,000 acres of quail preserves between Thomasville, Ga. and Tallahassee, Fla.

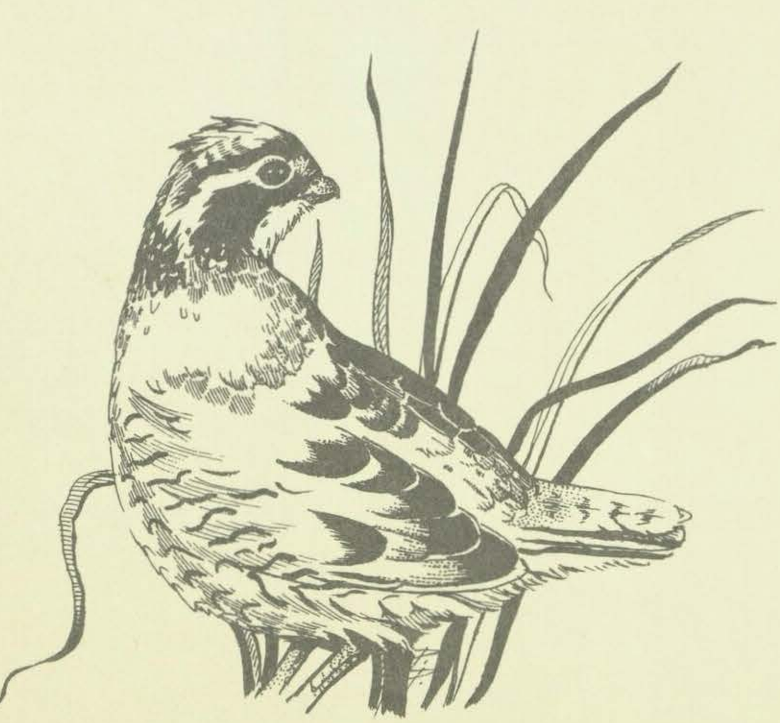
Though field studies of wild animals are common now, the Cooperative Quail Investigation, initiated in 1924, was a pioneer effort. Ecology was an infant discipline in the 1920s, and though land management for feature species was the rule in agriculture — cow pasture, duck pond — few had considered how such principles could apply to wildlife. When officials of the Bureau of Biological Survey chose Herbert Stoddard to head the Cooperative Quail Investigation, they must have had luck on their side.

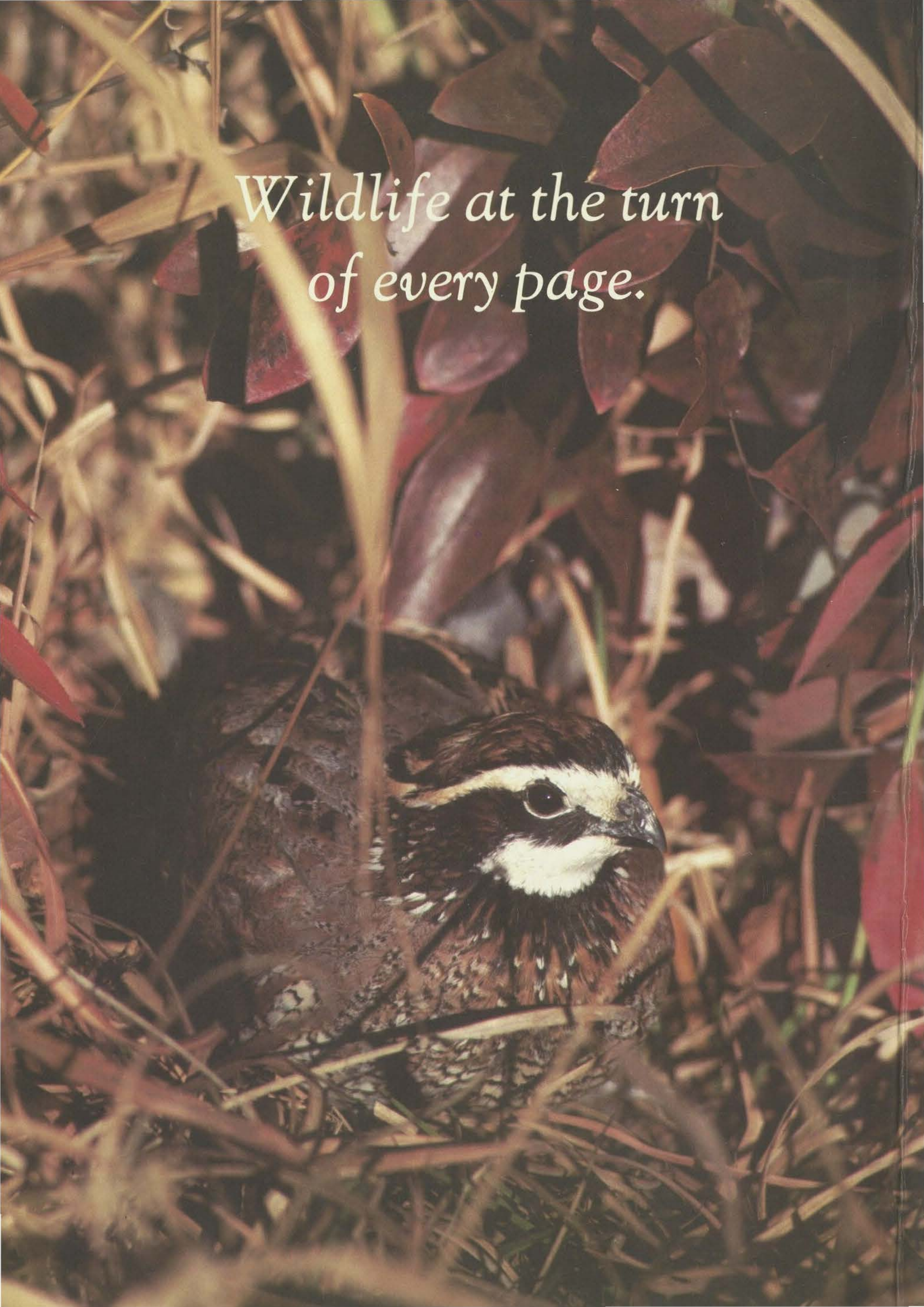
Stoddard was an ornithologist known for his museum exhibits at Chicago's Field Museum of Natural History. But more importantly, Stoddard had grown up on a farm in central Florida. He had seen how the elements prepared the cattle pastures and forest floors for a succulent new growth of grass in the spring; he had watched the slow creep of ground-fires set by lightning. When Stoddard published his landmark monograph on quail, his primary conclusion was "the Bobwhite of the Southeastern United States was undoubtedly evolved in an environment that was always subject to occasional burning over."

Stoddard found that there was a direct relationship between quail and fire — that there were more quail where there was low vegetation density, and low vegetation density where there was periodic fire. The birds "avoid, except for temporary shelter, the dense growth referred to in the South as the 'rough'...Cover for the birds *at their level* should be open enough for them to run about easily and find their food without having to dig down into a mat of surface litter." Stoddard went on to emphasize that "a mat of tangled grasses and pine needles *prevents the bobwhite from utilizing such seed* as may be present; they could starve in a land of plenty if their food was buried under a mat of such litter."

Stoddard's recognition of fire as a force vital to the survival of quail blazed a trail for scientists who have since found fire crucial to many other species that have evolved in this habitat. Ecologists and land managers now appreciate the role of fire in preserving the wildlife of the coastal plains piney woods — a unique southern biological community.

— Mary Tebo





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